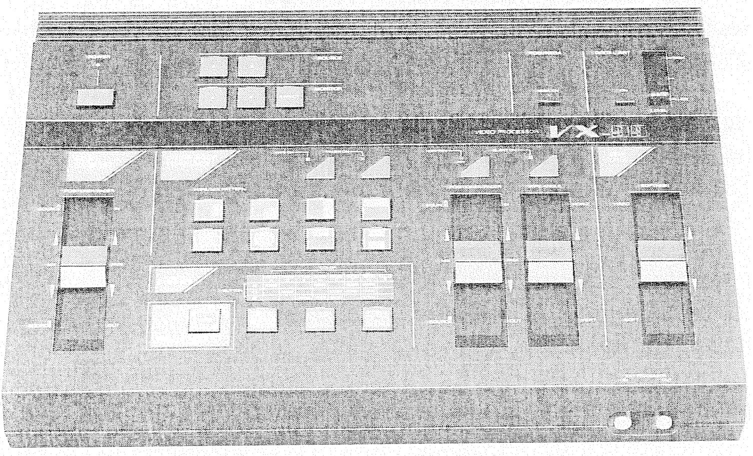
SERVICE MANUAL

VIDEO PROCESSOR

SANSUI VX-99

<NTSC/PAL>



CAUTION

1. Parts identified by the ⚠ symbol on the schematic diagram and the parts list are critical for safety. Use only replacement parts that have critical characteristics recommended by the manufacturer.
2. Make leakage-current or resistance measurements to determine that exposed parts are acceptably insulated from the supply circuit before returning the appliance to the customer.

SANSUI ELECTRIC CO., LTD.

•SPECIFICATIONS

<NTSC>

VIDEO INPUT sensitivity/Impedance	1.0 Vp-p/75 ohms
VIDEO OUTPUT level/Impedance	1.0 Vp-p/75 ohms
AUDIO INPUT sensitivity/Impedance	—6 dBs/47 kohms
AUDIO OUTPUT level/Impedance	—6 dBs/10 kohms
Frequency response	
VIDEO IN→MONITOR OUT	5 Hz ~ 7 MHz, ±2 dB
AUDIO IN→MONITOR OUT	20 Hz ~ 100 kHz —3 dB

Others

Power requirements	120/220/240V 50/60 Hz
For U.S.A. and Canada	120V (60 Hz)
Power consumption	20 watts Rated
Dimensions	360 mm (14-3/16")W 103 mm (4-1/16")H 280 mm (11-1/16")D
Weight	3.0 kg (6.6 lbs) net 4.0 kg (8.8 lbs) packed

<PAL>

VIDEO INPUT sensitivity/Impedance	1.0 Vp-p/75 ohms
VIDEO OUTPUT level/Impedance	1.0 Vp-p/75 ohms
AUDIO INPUT sensitivity/Impedance	—6 dBs/47 kohms
AUDIO OUTPUT level/Impedance	—6 dBs/10 kohms
Frequency response	
VIDEO IN→MONITOR OUT	5 Hz ~ 7 MHz, ±2 dB
AUDIO IN→MONITOR OUT	20 Hz ~ 100 kHz —3 dB

Others

Power requirements	220/240V 50/60 Hz
For Saudi Arabia	127/220V
Power consumption	20 watts Rated
Dimensions	360 mm (14-3/16")W 103 mm (4-1/16")H 280 mm (11-1/16")D
Weight	3.0 kg (6.6 lbs) net 4.0 kg (8.8 lbs) packed

* Design and specifications subject to changes without notice for improvements.
* Due to local laws and regulations, this unit sold in some areas are no equipped with variable voltage selecltors.

NOTE

1. The symbols, UL, CSA, SA, BS, UK, EU, AS, SS, XX <EXPORT> and XX-V <EXPORT(V)> on the parts list and the schematic diagram mean followings respectively.

UL	Manufactured for U.S.A market. (Underwriters Laboratories approved model.)
CSA	Manufactured for Canadian market.
SA	Manufactured for South African market.
BS, UK	Manufactured for United Kingdom market.
EU	Manufactured for European market.
AS	Manufactured for Australian market.
SS	Manufactured for Saudi Arabia market.
XX <EXPORT>	Standard Version with Inner Voltage Selector.
XX-V <EXPORT(V)>	Standard Version with Outer Voltage Selector.
NON MARK	Common Parts.

2. Some printed circuit boards are not supplied assembled. To separate these in this service manual, the stock numbers are not indicated for these boards. However, stock numbers for individual parts are indicated.

3. Since some capacitors and resistors are omitted from parts lists in this service manual, refer to the Common Parts List for capacitors and resistors, which was issued on February 1983.

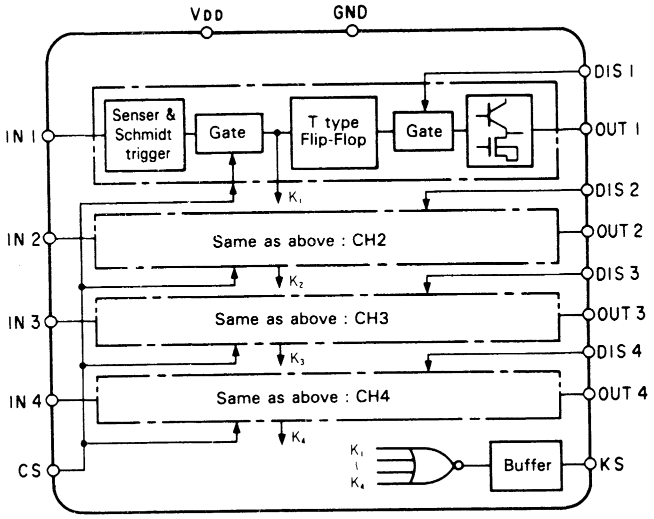
4. Abbreviations in this service manual are as follows.

•Abbreviations List

C.R. : Carbon Resistor
S.R. : Solid Resistor
Ce.R. : Cement Resistor
M.R. : Metal Film Resistor
F.R. : Fusing Resistor
N.I.R. : Non-Inflammable Resistor
A.R. : Array Resistor
C.C. : Ceramic Capacitor
C.T. : Ceramic Capacitor, Temperature Compensation
E.C. : Electrolytic Capacitor
E.L. : Low Leak Electrolytic Capacitor
E.B. : Bi-Polar Electrolytic Capacitor
E.B.L. : Low Leak Bi-Polar Electrolytic Capacitor
Ta.C. : Tantalum Capacitor
F.C. : Film Capacitor
M.P. : Metalized Paper Capacitor
P.C. : Polystyrene Capacitor
G.C. : Gimmic Capacitor
A.C. : Array Capacitor
V.R. : Variable Resistor
S.V.R. : Semi Variable Resistor
SW. : Switch
Chip R. : Chip Resistor
Chip C. : Chip Capacitor

1. INTERIOR BLOCK DIAGRAM & TERMINAL FUNCTION OF IC

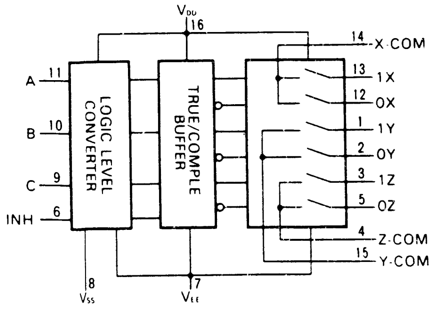
• TC9130P (Cyclic Type Flip-Flop)


VDD
GND
IN 1
Senser & Schmidt trigger
Gate
T type Flip-Flop
Gate
DIS 1
OUT 1
K₁
DIS 2
IN 2
Same as above : CH2
OUT 2
K₂
DIS 3
IN 3
Same as above : CH3
OUT 3
K₃
DIS 4
IN 4
Same as above : CH4
OUT 4
K₄
CS
K₁
K₄
Buffer
KS

•Function Table (MB84013BM)

Pin No.	Symbols	Terminal Name	Function and Operation
15 to 12	IN-1 ≀ IN-4	Input signal terminals	When a voltage applied to these terminals changes from "H" to "L", the output of the corresponding channel is inverted.
1, 3, 5, 7	OUT-1 ≀ OUT-4	Output terminals	Whenever the corresponding input terminal changes from "H" to "L", the output level is inverted. The output circuit is of complementary type of bipolar NPN transistor and Nch MOS FET.
2, 4, 6, 9	DIS-1 ≀ DIS-4	Output-disable terminal	If this terminal is set to "L", the corresponding output terminal is fixed at "L" irrespective of the internal flip-flop condition. In this case, an input signal is receivable as usual.
10	CS	Input-disable terminal	If this terminal is set to "L", all the inputs from IN1 to 4 are disabled and the internal flip-flop condition is held.
11	KS	Input detection terminal	When a "L" signal is given to any one of the input terminals IN1 to 4, this terminal is changed to "L" level.
16	VDD	Power voltage terminal	
8	GND	Ground terminal	

• TC4053BP (Triple 2-channel Multiplexer)

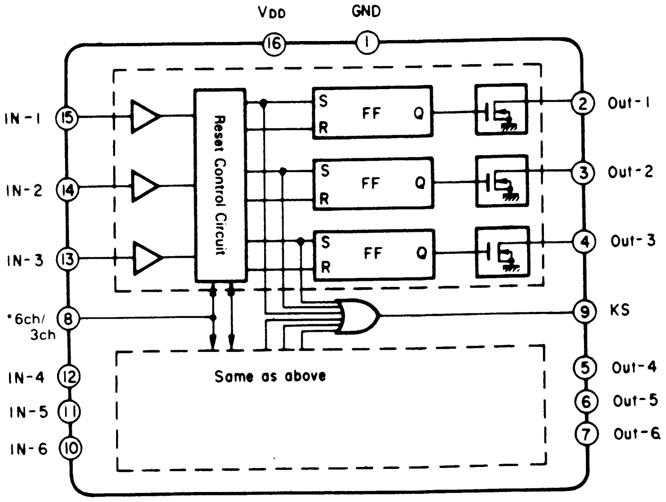

VDD
16
14
X·COM
A
11
13
1X
12
0X
B
10
1
1Y
2
0Y
C
9
3
1Z
5
0Z
INH
6
LOGIC LEVEL CONVERTER
TRUE/COMPLE BUFFER
4
Z·COM
15
Y·COM
8
VSS
7
VEE

• Function Table <TC4053BP>

CONTROL INPUT				"ON" CHANNEL
INHIBIT	C	B	A	
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	×	×	×	NONE

× = Don't Care

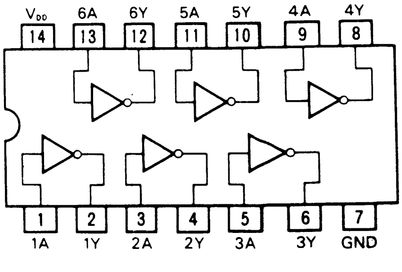
• TC9135P (6-ch Mutually Type Flip-Flop)


VDD
GND
⑯
①
IN-1
⑮
IN-2
⑭
IN-3
⑬
Reset Control Circuit
S
R
FF
Q
②
Out-1
③
Out-2
④
Out-3
•6ch/3ch
⑧
⑨
KS
IN-4
⑫
IN-5
⑪
IN-6
⑩
Same as above
⑤
Out-4
⑥
Out-5
⑦
Out-6

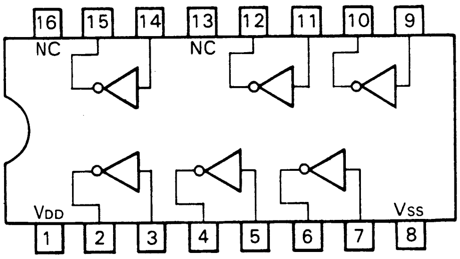
•Function Table (TC4053BP)

Pin Nos.	Symbols	Terminal Name	Function and Operation
10 to 15	IN-1 to IN-6	Input signal terminals:	When a voltage applied to any of input terminals IN-1 to IN-6 changes in level from "H" to "L", the Nch FET at the output terminal corresponding to the "L" input terminal is turned on, the other terminal outputs being turned off. These terminals can respond to both a mechanical key of feather touch type and a touch switch of touch sensor type.
2 to 7	Out-1 to Out-6	Output terminals:	When a voltage applied to the corresponding input terminal changes to "L", the Nch FET at the output terminal is turned on to change the output level to "L". This output status is kept at "L" level, even if the corresponding input terminal is returned to "H". However, when an input signal is applied to the other channels, the released Nch FET is turned off, the output being returned to "open" status. A maximum of 30 mA current can be passed through the Nch FET at the output, so that it is possible to directly drive an LED or a small relay.
9	KS	Input detection signal terminal:	The KS terminal output is kept at "H" level only while a "L" level signal is applied to any of the input terminals IN1 to IN6.
8	6/3	6ch/3chx2 Switch input terminal:	When this terminal is at "H" level, all the flip-flops in the six internal circuits are connected to each other as a mutually reset circuit. However, when at "L" level, the circuit is separated into two 3ch-mutually-reset circuits for IN-1 to IN-3 and IN-4 to IN-6.
16	VDD	Power voltage terminal	
1	GND	Ground terminal·	

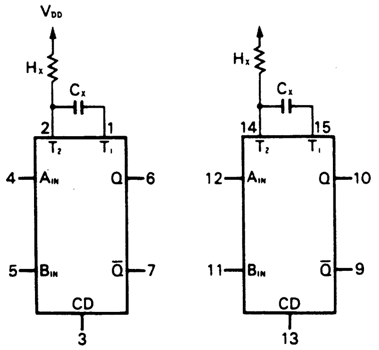
• TC74HC04P/HD74HC04P (Hex Inverter)


VDD
6A
6Y
5A
5Y
4A
4Y
14
13
12
11
10
9
8
1
2
3
4
5
6
7
1A
1Y
2A
2Y
3A
3Y
GND

• MSM4049BRS/TC4049BP (Hex Inverter)


16
15
14
13
12
11
10
9
NC
NC
VDD
Vss
1
2
3
4
5
6
7
8

• MSM4538RS/TC4538BP (Maltivibrators)


VDD
Rx
Cx
2
1
T2
T1
4
AIN
Q
6
5
BIN
Q̄
7
CD
3
Rx
Cx
14
15
T2
T1
12
AIN
Q
10
11
BIN
Q̄
9
CD
13

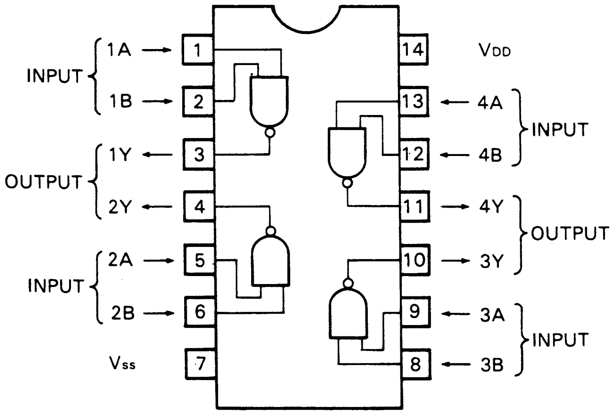
V_{DD} : 16, V_{SS} : 8

• Function Table <MSM4538RS/TC4538BP>

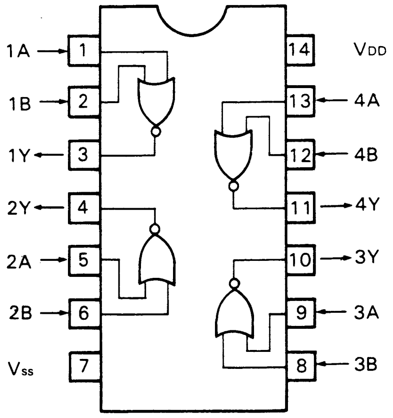
INPUT			OUTPUT		NOTE
A_{IN}	B_{IN}	CD	Q	$\overline{Q}$	
↑	H	H	⊓	⊔	OUTPUT ENABLE
↑	L	H	L	H	INHIBIT
H	↓	H	L	H	INHIBIT
L	↓	H	⊓	⊔	OUTPUT ENABLE
*	*	L	L	H	INHIBIT

* : Don't Care

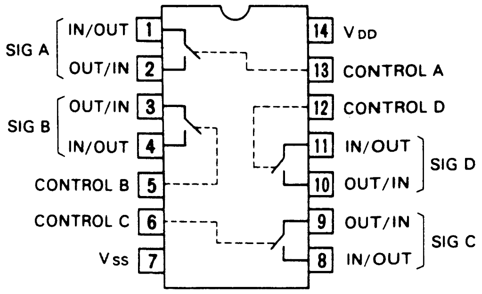
• BU4011B/MSM4011BRS/TC4011P (Quad NAND)


INPUT
1A
1B
OUTPUT
1Y
2Y
INPUT
2A
2B
Vss
1
2
3
4
5
6
7
14
13
12
11
10
9
8
VDD
4A
4B
INPUT
4Y
3Y
OUTPUT
3A
3B
INPUT

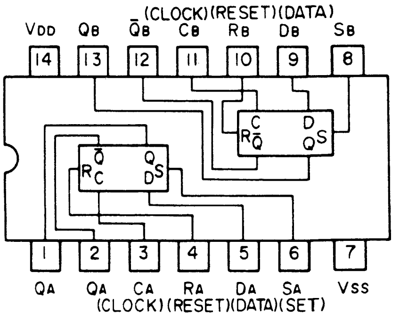
• BU4001B/MSM4001BRS/TC4001P (Quad NOR)


1A
1B
1Y
2Y
2A
2B
Vss
1
2
3
4
5
6
7
14
13
12
11
10
9
8
VDD
4A
4B
4Y
3Y
3A
3B

• BU4066B/MSM4066BRS/TC4066BP (Quad Analog Switch)


SIG A
IN/OUT
OUT/IN
SIG B
OUT/IN
IN/OUT
CONTROL B
CONTROL C
Vss
1
2
3
4
5
6
7
14
13
12
11
10
9
8
VDD
CONTROL A
CONTROL D
IN/OUT
OUT/IN
SIG D
OUT/IN
IN/OUT
SIG C

• MB84013BM (Dual D-Type Flip-Flop)


(CLOCK)(RESET)(DATA)
VDD
QB
Q̄B
CB
RB
DB
SB
14
13
12
11
10
9
8
C
D
R
Q̄
Q
S
Q̄
Q
R
C
D
S
1
2
3
4
5
6
7
QA
Q̄A
CA
RA
DA
SA
Vss
(CLOCK)(RESET)(DATA)(SET)

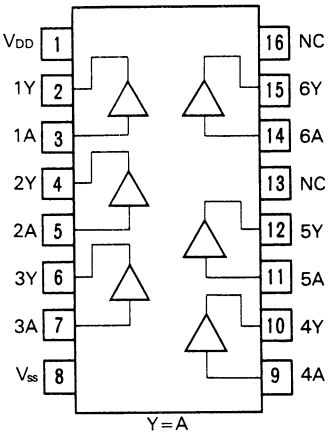
• Function Table <MB84013BM>

INPUT				OUTPUT	
CLOCK	DATA	SET	RESET	Qn+1	$\overline{Q}$n+1
↑	L	L	L	L	H
↑	H	L	L	H	L
↓	×	L	L	Qn	$\overline{Q}$n
×	×	L	H	L	H
×	×	H	L	H	L
×	×	H	H	L	L

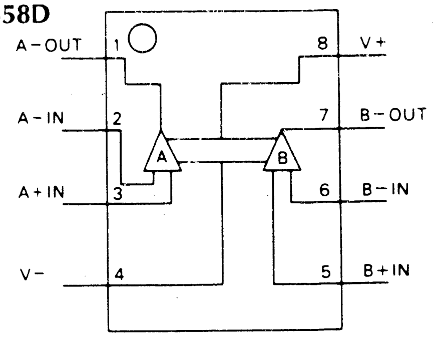
H: High Level
L: Low Level
X: H or L

Qn : Output befor clockpulse
Qn + 1: Output Signal after clockpulse

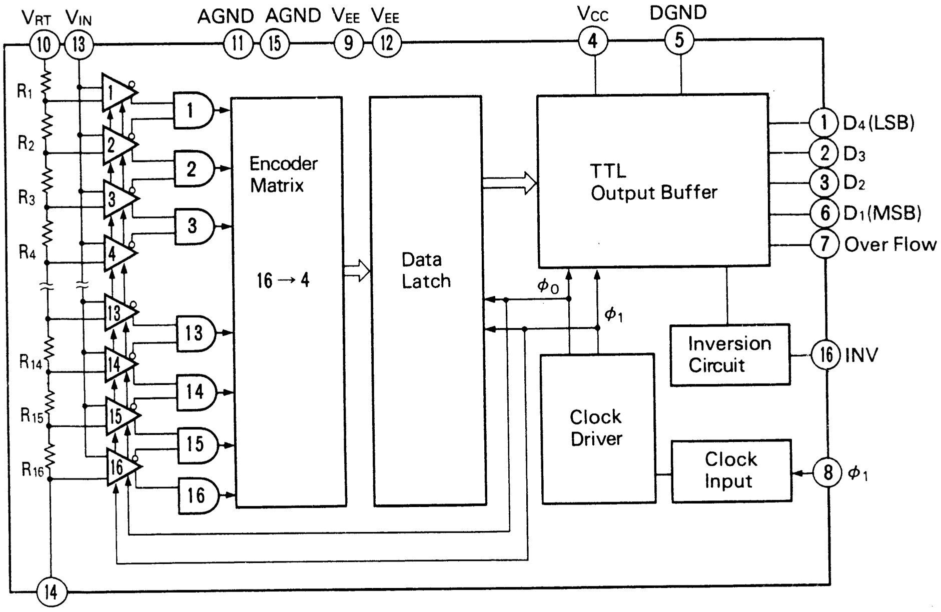
• MB84050 (Baffer Amp.)

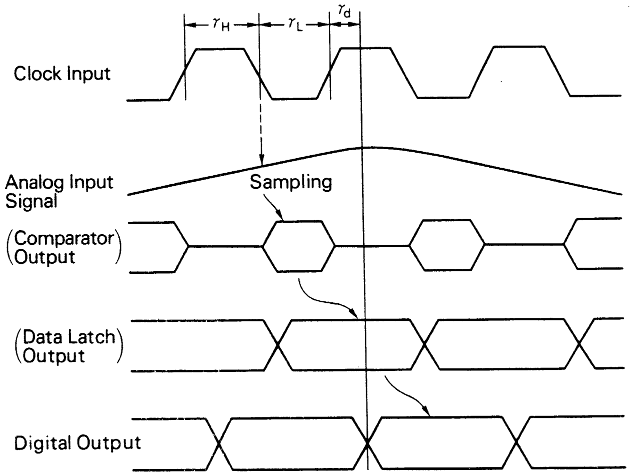

VDD 1
1Y 2
1A 3
2Y 4
2A 5
3Y 6
3A 7
Vss 8
16 NC
15 6Y
14 6A
13 NC
12 5Y
11 5A
10 4Y
9 4A
Y=A

• M5218/M5216L/M5219/M5532 (OP Amp.) NJM4558D


A−OUT
A−IN
A+IN
V−
1
2
3
4
8
7
6
5
V+
B−OUT
B−IN
B+IN
A
B

• AN6855 (A/D Converter)


VRT
VIN
AGND
AGND
VEE
VEE
Vcc
DGND
10
13
11
15
9
12
4
5
R1
R2
R3
R4
R14
R15
R16
1
2
3
4
13
14
15
16
Encoder Matrix
16 → 4
Data Latch
TTL Output Buffer
φ0
φ1
Clock Driver
Inversion Circuit
Clock Input
1 D4(LSB)
2 D3
3 D2
6 D1(MSB)
7 Over Flow
16 INV
8 φ1
14

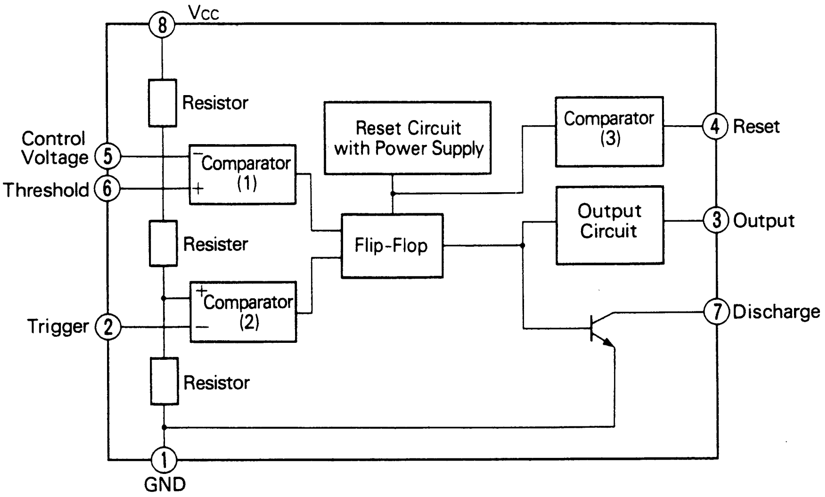

τH
τL
τd
Clock Input
Analog Input Signal
Sampling
(Comparator Output)
(Data Latch Output)
Digital Output

Note: Comparator and Data Latch Output have not EXT terminal as they are Interal signal.

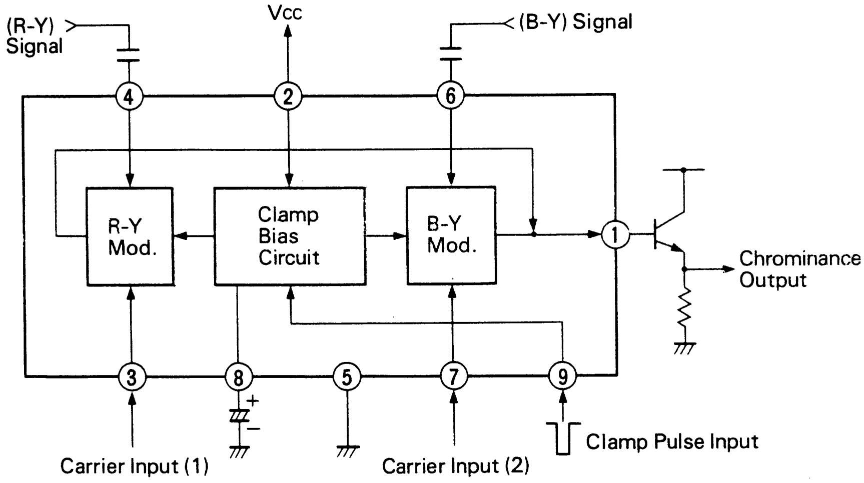
• Function Table <AN6855>

Pin No.	Pin Name
1	4th bit (LSB)
2	3rd bit
3	2nd bit
4	Vcc
5	Digital GND
6	1st bit (MSB)
7	Over Flow
8	Clock Input
9	VEE
10	Ref. High Level
11	Analog GND
12	VEE
13	Analog Input
14	Ref. Low Level
15	Analog GND
16	Output Inversion

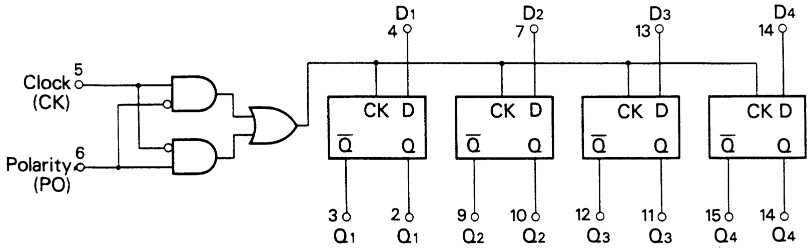
• AN1555 (Precision Timer)


Vcc
8
Resistor
Control Voltage 5
Threshold 6
Comparator (1)
Reset Circuit with Power Supply
Comparator (3)
4 Reset
Resister
Flip-Flop
Output Circuit
3 Output
Comparator (2)
Trigger 2
7 Discharge
Resistor
1
GND

• AN6040 (Color Encoder)


(R-Y) Signal
Vcc
(B-Y) Signal
4
2
6
R-Y Mod.
Clamp Bias Circuit
B-Y Mod.
1
Chrominance Output
3
8
5
7
9
Carrier Input (1)
Carrier Input (2)
Clamp Pulse Input

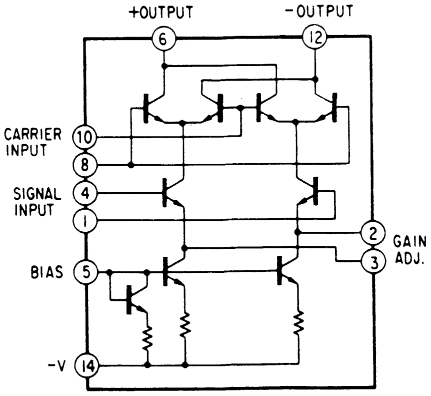
• μPD4042BC (Quad Clocked "D" Latch)


D1 4
D2 7
D3 13
D4 14
Clock 5 (CK)
Polarity 6 (PO)
CK D
Q̄ Q
3 Q̄1
2 Q1
9 Q̄2
10 Q2
12 Q̄3
11 Q3
15 Q̄4
14 Q4

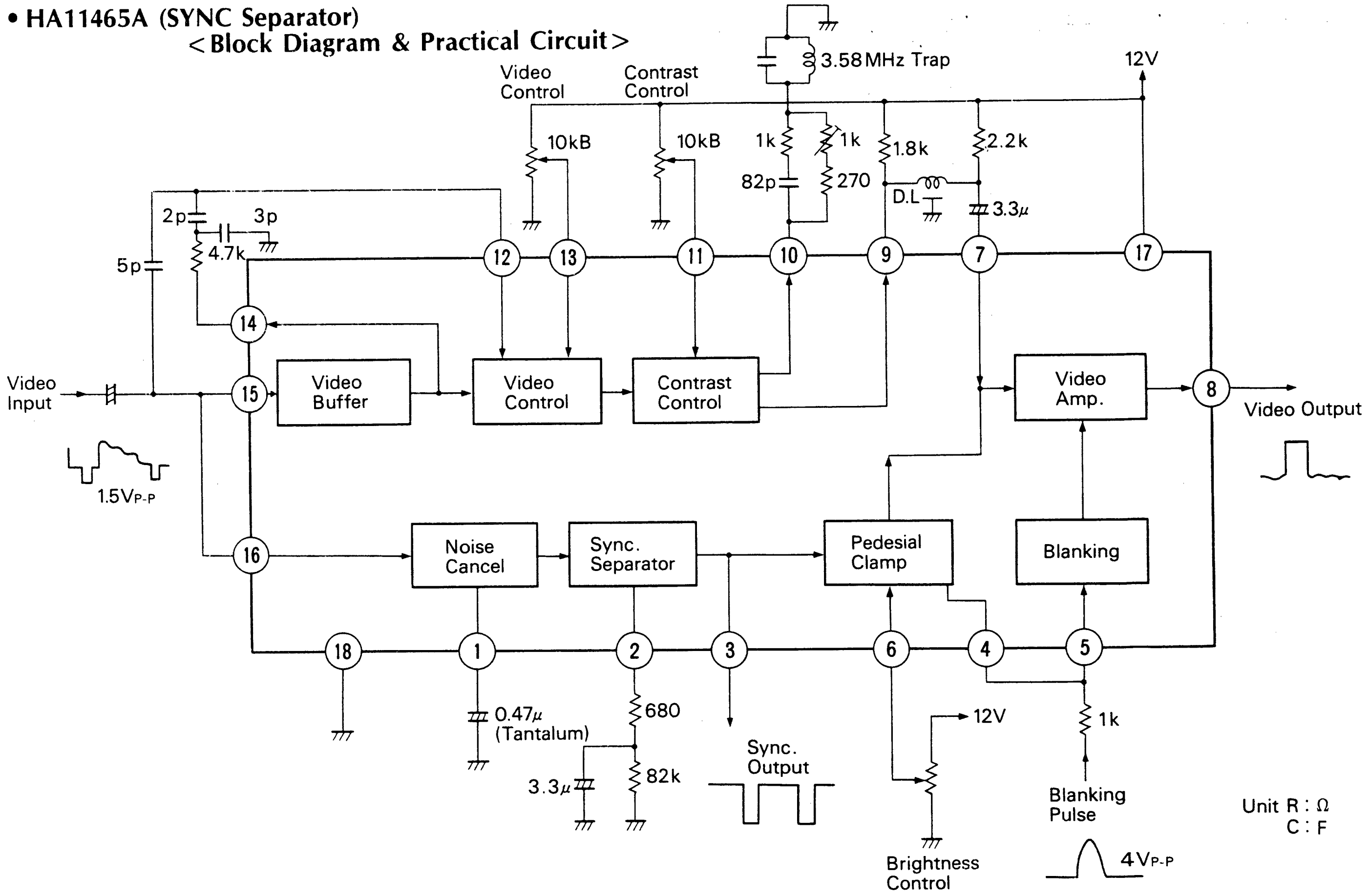
• Function Table <rPD4042BC>

Clock	Polarity	Q
L	L	DATA
↑	L	LATCH
H	H	DATA
↓	H	LATCH

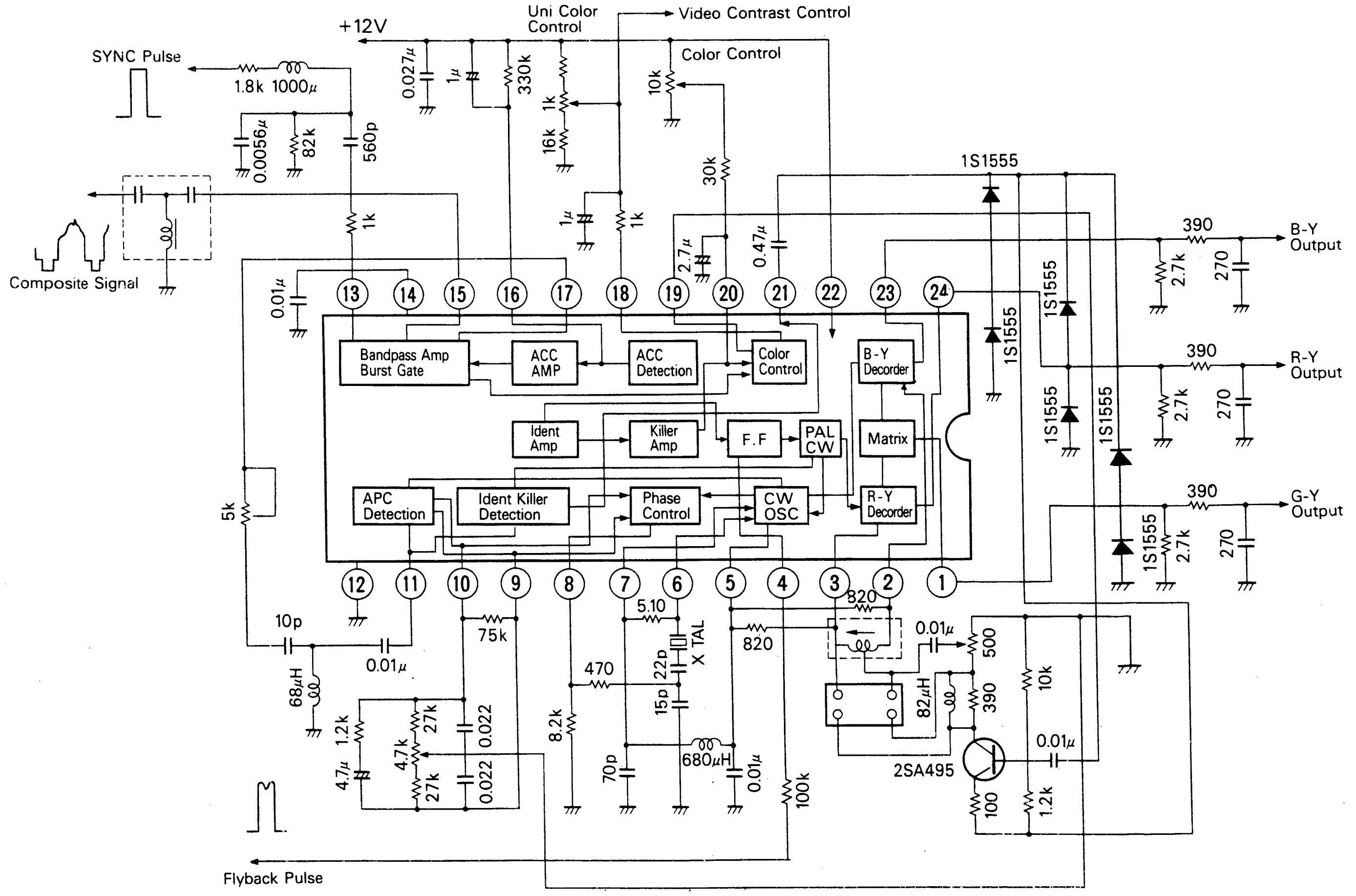
• NJM1496D (Duble Balance Mixer)


+OUTPUT
-OUTPUT
6
12
CARRIER INPUT
10
8
SIGNAL INPUT
4
1
2
3
GAIN ADJ.
BIAS
5
-V
14

• HA11465A (SYNC Separator) <Block Diagram & Practical Circuit>


3.58MHz Trap
12V
Video Control
Contrast Control
10kB
10kB
1k
1k
82p
270
1.8k
2.2k
D.L
3.3μ
2p
3p
4.7k
5p
12
13
11
10
9
7
17
14
15
16
Video Input
Video Buffer
Video Control
Contrast Control
Video Amp.
8
Video Output
1.5Vp-p
Noise Cancel
Sync. Separator
Pedesial Clamp
Blanking
18
1
2
3
6
4
5
0.47μ (Tantalum)
680
82k
3.3μ
Sync. Output
12V
1k
Blanking Pulse
Brightness Control
4Vp-p
Unit R : Ω
C : F

• TA7193 (Color System) <Block Diagram & Practical Circuit>


+12V
Uni Color Control
Video Contrast Control
Color Control
SYNC Pulse
1.8k 1000μ
0.027μ
1μ
330k
1k
16k
10k
0.0056μ
82k
560p
30k
1S1555
1μ
1k
2.7μ
0.47μ
1k
Composite Signal
0.01μ
13
14
15
16
17
18
19
20
21
22
23
24
Bandpass Amp Burst Gate
ACC AMP
ACC Detection
Color Control
B-Y Decorder
Ident Amp
Killer Amp
F.F
PAL CW
Matrix
APC Detection
Ident Killer Detection
Phase Control
CW OSC
R-Y Decorder
5k
12
11
10
9
8
7
6
5
4
3
2
1
10p
0.01μ
75k
68μH
1.2k
4.7μ
4.7k
27k
27k
0.022
0.022
470
8.2k
5.10
22p
X TAL
15p
70p
680μH
0.01μ
100k
820
820
0.01μ
500
82μH
390
10k
2SA495
0.01μ
100
1.2k
Flyback Pulse
390
2.7k
270
B-Y Output
390
2.7k
270
R-Y Output
390
2.7k
270
G-Y Output
1S1555
1S1555
1S1555
1S1555
1S1555

2. PARTS LIST OF CIRCUIT BOARD

2-1. F-5649 Color Function Switching Board

(Stock No. 01032401)

Parts No.	Stock No.	Description
fVR6	48779400	2kΩ (B) V.R., ANGLE
fVR12	48779400	2kΩ (B) V.R., POSITION
fVR13	48351500	10kΩ (B) V.R., SOFTNES
jVR1	48779300	50kΩ (B) V.R., FADAR, MIX
•Transistor		
nQ1	46367001	2SA1115
nQ2	46367001	2SA1115
nQ3	46367001	2SA1115
nQ4	46367101	2SC2603
nQ5	46367001	2SA1115
nQ6	46367101	2SC2603
nQ7	46367101	2SC2603
nQ8	46367001	2SA1115
nQ9	46367001	2SA1115
nQ10	46367001	2SA1115
nQ11	48183400	DTA114YS
nQ12	48183400	DTA114YS
nQ13	48183400	DTA114YS
nQ14	48183400	DTA114YS
nQ15	48183400	DTA114YS
•IC		
nIC1	48109600	TC9135P
nIC2	48239100	TC9130P
nIC3	48239100	TC9130P
nIC4	48109600	TC9135P
nIC5	03611900	MSM4050RS
	or 98004100	MB84050BM
nIC6	46505400	μPD4042BC
nIC7	46505400	μPD4042BC
nIC8	03604100	TC4011P
	or 48050100	MSM4011BRS
	or 48063700	BU4011B
nIC9	46160500	TC4049BP
•Diode		
nD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD6	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD7	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD8	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD9	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD10	03117600	1S2473T77
	or 46086000	1S1588TP-3
nD12	03117600	1S2473T77
	or 46086000	1S1588TP-3
•LED		
nLD1	46470300	SEL2410E, EFFECT
nLD2	46470300	SEL2410E, MONITOR B
nLD3	46470300	SEL2410E, MONITOR A
nLD4	46470300	SEL2410E, SOURCE B
nLD5	46470300	SEL2410E, SOURCE A
nLD6	46470300	SEL2410E, R
nLD7	46470300	SEL2410E, G
nLD8	46470300	SEL2410E, B
nLD9	46470300	SEL2410E, MIX
nLD12	48126300	SEL2210S, SLANT
nLD13	48126300	SEL2210S, ART
nLD14	48126300	SEL2210S, N/P
nLD15	48126300	SEL2210S, WIPE
nLD16	48126300	SEL2210S, FADA
nLD17	48126300	SEL2210S, NOR/REV
nLD18	46470300	SEL2410E, ▣
nLD19	46470300	SEL2410E, ▨
nLD20	46470300	SEL2410E, ◨
nLD21	46470300	SEL2410E, ◲
nLD22	46470300	SEL2410E, ◫
nLD23	46470300	SEL2410E, ⬒
nLD24	46470300	SEL2410E, ◉
nLD25	46470300	SEL2410E, ⬒
nLD26	48126300	SEL2210S,
oS7	46708100	Push SW., A SOURCE
oS8	46708100	Push SW., B SOURCE
oS9	46708100	Push SW., A MONITOR
oS10	46708100	Push SW., B MONITOR
oS11	46708100	Push SW., EFFECT MONITOR
oS12	46708100	Push SW., NOR/REV
oS13	46708100	Push SW., DIGITAL ART
oS14	46708100	Push SW., WIPE
oS15	46708100	Push SW., FADA
oS16	46708100	Push SW., N/P
oS17	46708100	Push SW., SLANT
oS18	46708100	Push SW., R
oS19	46708100	Push SW., G
oS20	46708100	Push SW., B
oS21	46708100	Push SW., MIX
oS24	46708100	Push SW., ▨
oS25	46708100	Push SW., ⬒
oS26	46708100	Push SW., ◱
oS27	46708100	Push SW., ⬓
oS28	46708100	Push SW., ◫
oS29	46708100	Push SW., ◉
oS30	46708100	Push SW., ◨
oS31	46708100	Push SW., ▣
rVR4	48828500	3kΩ (B) V.R., DIGITAL ART

2-2. F-5650 Color Management Board

(Stock No. 01032501 = NTSC System/01050805 = PAL System)

Parts No.	Stock No.	Description
•Transistor		
fQ6	46367101	2SC2603
fQ7	46367101	2SC2603
fQ8	46367101	2SC2603
fQ9	46367001	2SA1115
fQ10	46367001	2SA1115
fQ11	46367101	2SC2603
fQ12	46367101	2SC2603
•IC		
fIC13	48781100	HA11465A
fIC14	48780600	AN1555
fIC15	46122900	MSM4538RS
	or 46160800	TC4538BP
fIC16	46122900	MSM4538RS
	or 46160800	TC4538BP
fIC17	03604100	TC4011P
	or 48050100	MSM4011BRS
	or 48063700	BU4011B
fIC18	46122900	MSM4538RS
	or 46160800	TC4538BP
fL1	46204500	Inductor 10μH
fVR14	46634100	4.7kΩ S.V.R., H Blunking
fVR15	46739000	100kΩ S.V.R., V Blunking
fVR16	48849500	68kΩ S.V.R., V Blunking
fVR17	48849600	33kΩ S.V.R., H Blunking
fVR18	46738600	4.7kΩ S.V.R., H Blunking
fVR19	46738600	4.7kΩ S.V.R., H SYNC
fVR20	46738600	4.7kΩ S.V.R., H SYNC

Parts No.	Stock No.	Description
•Transistor		
rQ1	46367101	2SC2603
rQ2	46367101	2SC2603
rQ3	46367101	2SC2603
rQ4	46367001	2SA1115
rQ5	46367101	2SC2603
rQ6	46367101	2SC2603
rQ7	46367101	2SC2603
rQ8	46367101	2SC2603
rQ9	46367101	2SC2603
rQ10	46367101	2SC2603
rQ11	46367001	2SA1115
rQ12	46367101	2SC2603
rQ13	46367101	2SC2603
rQ14	46367101	2SC2603
rQ15	46367101	2SC2603
rQ16	46367101	2SC2603
rQ17	46367101	2SC2603
rQ18	46367101	2SC2603
rQ19	46367101	2SC2603
rQ20	46367101	2SC2603
rQ21	46367101	2SC2603
rQ22	46367101	2SC2603
rQ23	46367101	2SC2603
rQ27	46367101	2SC2603
rQ28	46367001	2SA1115
rQ29	46367101	2SC2603
rQ30	46367001	2SA1115
rQ31	46367101	2SC2603
rQ32	46367101	2SC2603
rQ33	46367101	2SC2603
rQ34	46367101	2SC2603
rQ35	46367101	2SC2603
rQ36	46367101	2SC2603
rQ37	46367101	3SC2603
rQ38	46367101	2SC2603
rQ39	46367101	2SC2603
rQ40	46367001	2SA1115
rQ41	46367101	2SC2603
rQ42	46367101	2SC2603
rQ43	46367101	3SC2603
rQ44	46367001	2SA1115
rQ45	03064901	2SC1583
rQ46	46367001	2SA1115
rQ47	46367101	2SC2603
rQ48	46367101	2SC2603
rQ51	46367001	2SA1115
rQ52	46393201	2SC3786
•IC		
rIC1	48781000	TA7193P
rIC2	48780800	AN6855
rIC3	48423400	TC74HC04P
	or 48723600	μPD74HC04C
rIC4	07207300	MB84013BM
rIC5	07207300	MB84013BM
rIC6	46545800	TC4053BP
rIC7	46545800	TC4053BP
rIC9	46545800	TC4053BP
rIC10	46545800	TC4053BP
rIC11	45545800	TC4053BP
rIC12	48780700	AN6040
rIC13	46723700	NJM1496D
rIC14	03610500	TC4001BP
	or 48050000	MSM4001BRS
	or 48067200	BU4001B
rX01	48865800	Quartz Element NR-18 <NTSC>
	48780500	Quartz Element NR-18 <PAL>
rX02	48835000	Quartz Element NR-18 <NTSC>
	48780400	Quartz Element NR-18 <PAL>
•Diode		
rD1	03117600	1S2473T77
	or 46086000	1S1588TP-3

Parts No.	Stock No.	Description
•Zener Diode		
rDZ1	46112100	05Z6.8-Y
rDZ2	46111800	05Z6.2-Y
rDZ3	46111200	05Z5.1-Y
rDZ4	46111200	05Z5.1-Y
rDZ5	46112900	05Z9.1-X
rDZ6	46110800	05Z4.7-X
rDZ7	46111800	05Z6.2-Y
rTC2	46437600	Trimmer Capacitor 40pF
rL1	48453000	Peaking Coil 12μH<NTSC>
	46204500	Inductor 10μH<PAL>
rL2	48452200	Peaking Coil 680μH
rL3	48452200	Peaking Coil 680μH
rL4	46205000	Inductor 68μH
rL5	46204500	Inductor 10μH
rL8	46205100	Inductor 100μH
rL9	46204500	Inductor 10μH
rT1	48350000	Trap Filter<NTSC>
	48780200	Trap Filter<PAL>
rT2	48350100	Trap Filter<NTSC>
	48780300	Trap Filter<PAL>
rT3	48350100	Trap Filter<NTSC>
rVR1	46634300	10kΩ S.V.R., POST Level
rVR2	46634300	10kΩ S.V.R., NEGA Level
rVR3	46633900	2.2kΩ S.V.R., SET UP Level
rVR5	46634100	4.7kΩ S.V.R., DIGITAL ART Level
rVR6	46738600	4.7kΩ S.V.R., Original Signal
rVR8	46634100	4.7kΩ S.V.R., White V Position
rVR9	46634100	4.7kΩ S.V.R., White V Position
rVR10	46738500	2.2kΩ S.V.R., Burst Level
rVR11	46634500	22kΩ S.V.R., H SYNC Level
rVR12	46633500	470Ω S.V.R., Black Level
rVR13	46738800	22kΩ S.V.R., Whie V Position
rVR14	46738800	22kΩ S.V.R., White H Position
rVR15	48399200	3.3kΩ S.V.R., Color Amplitudo
rVR16	46634300	10kΩ S.V.R., Black V Position
rVR17	46634300	10kΩ S.V.R., H Position
rVR18	46634300	10kΩ S.V.R., Black Level
rVR19	46633700	1kΩ (B) S.V.R., White Level
rVR20	48399200	3.3.kΩ S.V.R., Green Phase
rVR22	46738500	3.3kΩ S.V.R., Burst Phase

2-3. F-5651 Input/Output Switching Board

(Stock No. 01032701 = NTSC/01051005 = PAL)

Parts No.	Stock No.	Description
•Transistor		
fQ1	46367001	2SA1115
fQ2	46367001	2SA1115
fQ3	46367101	2SC2603
fQ4	46367101	2SC2603
fQ5	46367101	2SC2603
fQ13	46367101	2SC2603
•IC		
fIC1	46122900	MSM4538RS
	or 46160800	TC4538BP
fIC2	46545800	TC4053BP
fIC3	07224800	TC4066BP
	or 48054500	MSM4066BRS
	or 48063800	BU4066B
fIC4	46545800	TC4053BP
f1C5	07224800	TC4066BP
	or 48054500	MSM4066BRS
	or 48063800	BU4066B
fIC6	46545800	TC4053BP
fIC7	46545800	TC4053BP
fIC8	46122900	MSM4538RS
	or 46160800	TC4538BP
fIC9～12	46545100	M5221P

to be continued ►

<F-5651>

Parts No.	Stock No.	Description
•Diode		
fD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD3	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD4	03117600	1S2473T77
	or 46086000	1S1588TP-3
fD5	03117600	1S2473T77
	or 46086000	1S1588TP-3
fC1	46693600	2200pF 50V F.C.
fC2	46673200	0.22μF 63V M.M. Capacitor
fC3	46693000	1200pF 50V F.C.
fC4	46693000	1200pF 50V F.C.
fC5	46693600	2200pF 50V F.C.
fC6	46697600	0.1μF 50V F.C.
fC7	46697600	0.1μF 50V F.C.
fC8	46696000	0.022μF 50V F.C.
fC10	48103700	4.7μF 50V E.B.
fVR1	46738700	10kΩ S.V.R., } ▨ wipe position
fVR2	46738700	10kΩ S.V.R.,
fVR3	46634500	22kΩ S.V.R., ◧ wipe position
fVR4	46633700	1kΩ (B) S.V.R., } ▨ wipe position
fVR5	46633700	1kΩ (B) S.V.R.,
fVR7	46634300	10kΩ S.V.R., } ▨ wipe position
fVR8	46634700	47kΩ S.V.R.,
fVR9	46635100	220kΩ S.V.R., ⬓ wipe position
fVR10	46633700	1kΩ (B) S.V.R., } ▨ wipe position
fVR11	46634300	10kΩ S.V.R.,
•Transistor		
jQ1	46367101	2SC2603
jQ2	46367101	2SC2603
jQ3	46367101	2SC2603
jQ4	46367101	2SC2603
jQ5	46393201	2SC2786
jQ6	46367001	2SA1115
jQ7	46367101	2SC2603
jQ8	46367101	2SC2603
jQ9	46367101	2SC2603
jQ10	46393201	2SC2786
jQ11	46367001	2SA1115
jQ12	46367101	2SC2603
jQ13	46393201	2SC2786
jQ14	46367001	2SA1115
jQ15	46367101	2SC2603
jQ16	46367101	2SC2603
jQ17	46367101	2SC2603
jQ18	46367101	2SC2603
•IC		
jIC1	46545800	TC4053BP
jIC2	46545800	TC4053BP
jIC3	46545800	TC4053BP
jIC4	07224800	TC4066BP
	or 48054500	MSM4066BRS
	or 48063800	BU4066B
jIC5	07224800	TC4066BP
	or 48054500	MSM4066BRS
	or 48063800	BU4066B
jIC6	07224800	TC4066BP
	or 48054500	MSM4066BRS
	or 48063800	BU4066B
jIC7	07208900	NJM4558D-X
	or 46580100	M5218P
jIC8	07208900	NJM4558D-X
	or 46580100	M5218P
jIC9	07208900	NJM4558D-X
	or 46580100	M5218P
jIC10	07208900	NJM4558D-X
	or 46580100	M5218P
•Diode		
jD1	03117600	1S2473T77
	or 46086000	1S1588TP-3
jD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
jD3	48731500	Varistor SV-03YS
jD4	48731500	Varistor SV-03YS
jD5	48731500	Varistor SV-03YS
jD6	48731500	Varistor SV-03YS
jDZ1	46111200	05Z5.1Y
nD13	03117600	1S2473T77
	or 46086000	1S1588TP-3
oS1	48392300	3P Terminal, SOURCE <NTSC>
oS2	48392300	3P Terminal, SOURCE <NTSC>
oS3	48310000	3P Terminal, REC <NTSC>
oS4	48310000	3P Terminal, REC <NTSC>
oS32	48778700	BNC CONECTOR, LOOP OUT <NTSC>

2-4. F-5652 Input/Output Terminal Board (PAL)

Parts No.	Stock No.	Description
jIC	07224800	TC4066BP
	or 48054500	MSM4066BRS
oS1～4	48778600	Connector Socket
oS32	48778800	Connector

2-5. F-5653 EXT Processor Board

Parts No.	Stock No.	Description
oS5	48354200	1P Pin Terminal, EXT PROECESSOR
oS6	48354200	1P Pin Terminal, EXT PROCESSOR

2-6. F-5696 Power Supply Board (Stock No. 01040401)

Parts No.	Stock No.	Description
•Transistor		
mQ1	46367001	2SA1115
mQ2	46367001	2SA1115
mQ5	46367001	2SA1115
mQ6	48150801	2SB1015
•IC		
mIC1	48116100	SI-3122V
•Diode		
mD1	46260300	10E2
mD2	03117600	1S2473T77
	or 46086000	1S1588TP-3
mD3	46273600	DBB10B
	or 46273700	DBB10C
	or 48192000	DBB10E
	or 48192100	DBB10G
mD4	46273600	DBB10B
	or 46273700	DBB10C
	or 48192000	DBB10E
	or 48192100	DBB10G
•Zener Diode		
mDZ1	46113200	05Z10-X
mDZ3	46114100	05Z13-X
⚠pC1	46371700	4700pF 400V C.C.
⚠pS1	46413900	Push SW., POWER

3. ADJUSTMENTS

Conditions: 1. Remove front panel assembly from bottom cover assembly.

2. Arrange the connection as shown in Fig. 3-1. When no vector scope is used, connect MONITOR EFFECT terminal of the unit (VX-99) to VIDEO IN terminal of a color monitor TV.
3. See F-5650, F-5651 parts location on page 13, 14 for ADJUST. and CHECK POSI..

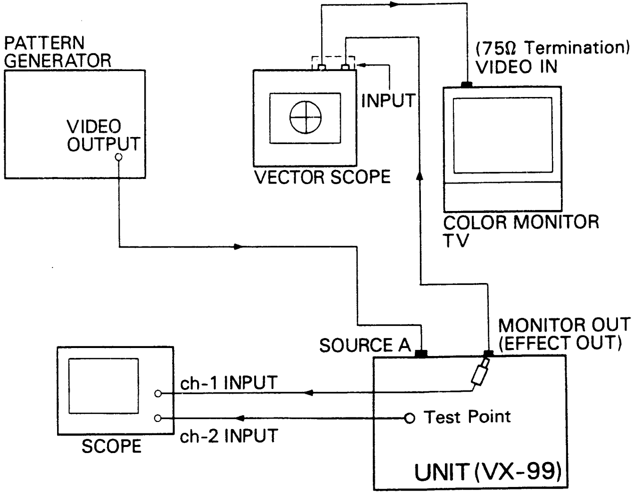
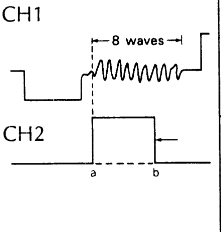
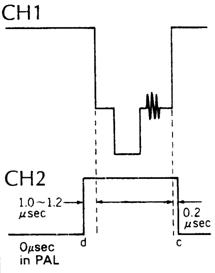
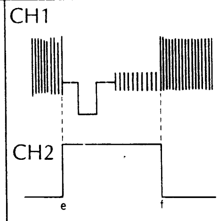
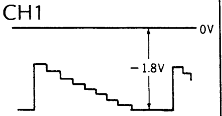
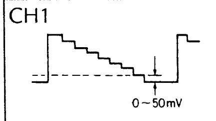
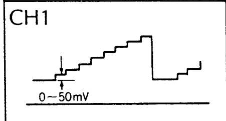
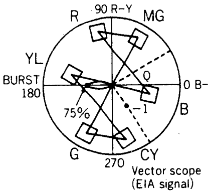
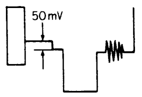
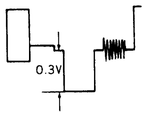
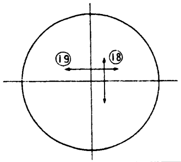
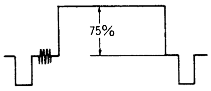
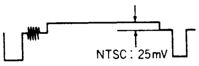
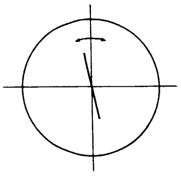
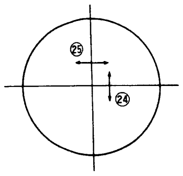

PATTERN GENERATOR
VIDEO OUTPUT
INPUT
VECTOR SCOPE
(75Ω Termination)
VIDEO IN
COLOR MONITOR TV
MONITOR OUT (EFFECT OUT)
SOURCE A
ch-1 INPUT
ch-2 INPUT
SCOPE
Test Point
UNIT (VX-99)

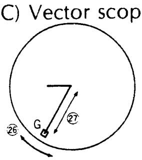
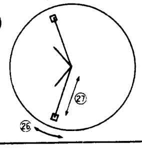
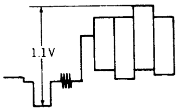
Fig. 3-1

3-1. SYNC & Set-up Level Adjustment

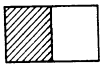
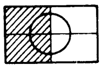
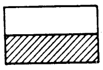
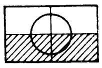
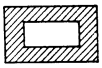
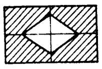
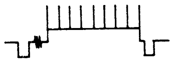
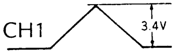
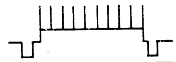
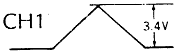
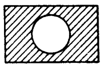
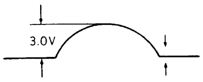
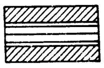
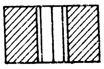
STEP	ADJUST ITEM	SETTING	ADJUST	CHECK POSI.	SYNC SIG.	HOW TO ADJUST	
1	H SYNC Pulse Width	INPUT SOURCE A: EIA color bar Scope CH1: MONI. OUT (75 ohm termination) WIPE ANGLE: HORIZ. SOFTNESS: SHARP SOURCE: A MONITOR: EFFECT FADER/POSI: A	① (fVR19)	Ⓐ JW86 (F-5650) Scope CH2	H	 CH1 8 waves CH2 a b	Set point a of TP signal to color burst start in monitor OUT waveform.
2			② (fVR20)				Set point b of TP signal as leftward as possible.
3	H Blanking Pulse Width	INPUT SOURCE A: RASTER MONITOR: A Scope CH1: MONI. OUT	③ (fVR18)	Ⓑ JW3 (F-5650) Scope CH2	H	 CH1 CH2 1.0~1.2 μsec 0.2 μsec 0μsec in PAL d c	Set point c to a position 0.2μsec behind from modulation start.
4			④ (fVR17)				Set point d to a position 1.0 to 1.2μsec before from modulation end, but to blue end in PAL system.
5			⑤ (fVR14)				Turn fVR14 full counterclockwise.
6	V Blanking Pulse Width	INPUT SOURCE A: RASTER MONITOR: A Scope CH1: MONI. OUT	⑥ (fVR15)	Ⓒ JW20 (F-5650) Scope CH2	V		Set point e to video signal (modulation) end.
7			⑦ (fVR16)				Set point f to video signal (modulation) start.
8	Set Up Level (Pedestal Level)	INPUT SOURCE A: FULL FIELD COLOR BAR (CHROMA: OFF)	⑧ (rVR3)	Ⓓ JW66 (F-5650) Scoupe CH1	H		Set oscilloscope to 0V in DC and adjust set-up level to 1.8V.
9	Black Level POGI	INPUT SOURCE A: FULL FIELD COLOR BAR (CHROMA: OFF)	⑨ (rVR1)				Set color bar black level to a position 0 to 50mV higher than the set-up level.
10	Black Level NEGA	POGI/NEGA: ON Turn off after adjustment.	⑩ (rVR2)				Turn on NEGA and set black level in NEGA to a position 0 to 50mV higher than the set-up level.
11	VXO	INPUT SOURCE B: No signal	⑪ (rTC2)	Ⓔ TP5 (F-5650) freq. counter		(NTSC) 3.579545MHz±50Hz (PAL) 4.433619MHz±50Hz	Set frequencies as shown left by adjusting trimmer.

3-2. Original Color & Back Color Adjustment

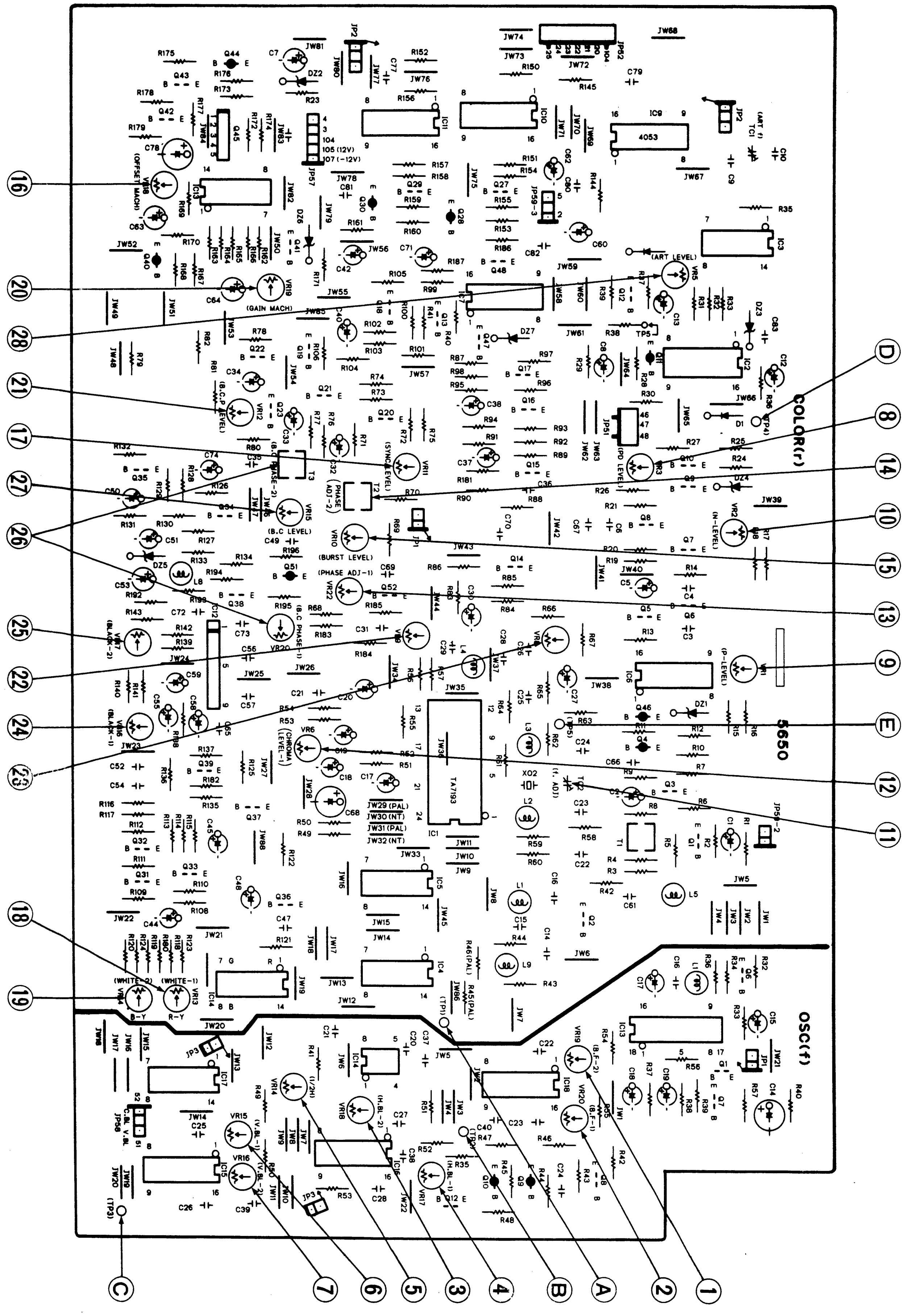
STEP	ADJUST ITEM	SETTING	ADJUST	CHECK POSI.	SYNC SIG.	HOW TO ADJUST	
1	Original Color Adjustment (Amplitude: Color Density)	FADER/POSITION: IN MONITOR: FROM A to EFFECT Vector scope: INPUT-A, SYNC-ϕA, GAIN-CAL'D OUTPUT-75ohm termination SATURATION: 75% INPUT SOURCE A: EIA color bar	⑫ (rVR6)	MONITOR OUT Vector scope		(NTSC)  R 90 R-Y MG YL BURST 180 Q 0 B-Y 75% -I B G 270 CY Vector scope (EIA signal)	Adjust amplitude, phase of vector scope with MONITOR set to A. Adjust amplitude as shown left by rVR6 with MONITOR set to EFFECT. Adjust so that each color enters within on vector scope.
2	Original Color Adjustment (Phase: Color Difference)		⑬ (rVR22)				Adjust burst phase with rVR22, after setting the same as above. When impossible with rVR22, proceed to Item 3 as it is.
3			⑭ (rT2)				When impossible in Item 2, use rT2.
4	Original Color Adjustment (Burst Level)		⑮ (rVR10)				Adjust burst level so as to e located at the 75% center on vector scope.
5	Original Color Black Level Adjustment	FADER/POSITION: ON MONITOR: EFFECT INPUT SOURCE A: EIA color bar	⑯ (rVR18)	MONITOR OUT Scope CH1	H	CH1 	(NTSC): Set color bar last black to a position 50mV higher than pedestal level. (PAL): Set the same to the pedestal level.
6	Original Color H-sync Level Adjustment		⑰ (rVR11)			CH1 	Set horizontal sync signal to a level 0.3V lower than pedestal level.
7	Back Color (White)	FADER/POSITION: OUT MONITOR: EFFECT COLOR: R, G, B are all ON INPUT SOURCE A: EIA color bar	⑱ (rVR13)	MONITOR OUT Vector scope CH1	H	Vector Scop 	Set vertical line to the center with rVR13 on vector scope.
8			⑲ (rVR14)				Set horizontal line to the center with rVR14 on the vector scope.
9			⑳ (rVR19)			CH1 	Adjust white level 75% in white. The level is the same as EIA color bar white (75%) of monitor A output.
10	Back Color (Black)	FADER/POSITION: OUT MONITOR: EFFECT COLOR: R, G, B are all ON INPUT SOURCE A: EIA color bar	㉑ (rVR12)	MONITOR OUT Scope CH1	H	CH1 	Adjust black level to 25mV in NTSC and to pedestal level in PAL. In adjustment, switch FADER from IN to OUT or vice versa to alternately adjust original and back color black.
11	Color Difference Basic Axis Adjustment (White Axis)	FADER/POSITION: OUT MONITOR: EFFECT COLOR: R, G, B are all ON INPUT SOURCE A: EIA color bar	㉒ (rVR9)	MONITOR OUT Vector scope		Temporary setting Vector scope 	Turn rVR19 full clockwise. Turn rVR18. If white axis moving direction is offset from the vertical axis, adjust rVR9 so that axis moves along the vertical axis.
12			㉓ (rVR8)				Ser rVR8 to the mechanical central position.
13	Color Difference Basic Axis Adjustment (Black Axis)	FADER/POSITION: OUT MONITOR: EFFECT COLOR: R, G, B are all OFF INPUT SOURCE A: EIA color bar	㉔ (rVR16)	MONITOR OUT Vector scope		Vector scope 	Set black axis to be vertical axis center on vector scope.
14			㉕ (rVR17)				Set black axis to the horizontal axis center on vector scope.

STEP	ADJUST ITEM	SETTING	ADJUST	CHECK POSI.	SYNC SIG.	HOW TO ADJUST	
15	Color Adjustment (Phase: Color Difference)	FADER/POSITION: OUT MONITOR: EFFECT COLOR: only G is ON INPUT SOURCE A: EIA color bar	㉖ (rVR20) (rT3)	MONITOR OUT Vector scope		(NTSC) Vector scope 	Upon checking burst phase and amplitude, adjust G phase with rVR20. If impossible, use rT3. Adjust both two in PAL.
16	Color Adjustment (Amplitude: Color Density)		㉗ (rVR15)			(PAL) 	Adjust G amplitude with rVR15. Switch back color from white to black or vice versa. If basic axis is offset, repeat the above Items 22 to 25.
17	Digital Art	INPUT SOURCE A: EIA color bar MONITOR: EFFECT DIGITAL ART: ON LEVEL: HIGH FADER: IN	㉘ (rVR5)	MONITOR OUT Scope CH1	H	CH1 	Adjust voltage between the bottom of horizontal sync. signal and the top of modulation to 1.1V.

3-3. Wipe Mix Pattern Adjustment

STEP	ADJUST ITEM	SETTING	ADJUST	CHECK POSI.	SYNC SIG.	HOW TO ADJUST		
1	Wipe Generator (RAMP)	MONITOR: EFFECT FADER/POSITION & WIPE ANGLE: CENTER INPUT SOURCE A: ALIGNMENT WIPE: ON 	㉙ (fVR3)	MONITOR OUT TV MONITOR		TV MONITOR 		Adjust circle to and fro with fVR3 to obtain wipe center.
2			㉚ (fRV9)			TV MONITOR 		Adjust circle up and down with fVR9 to obtain wipe center.
3	Wipe Generator Triangle Adjustment	MONITOR: EFFECT FADER/POSITION & WIPE ANGLE: CENTER INPUT SOURCE A: ALIGNMENT WIPE: ON SLANT: ON 	㉛ (fVR1)	Ⓖ JW43 (F-5651) Scope CH1 MONITOR OUT TV MONITOR Scope CH2	H	TV MONITOR  Adjust pattern to the center.	CH2 	Adjust rhombus horizontal width to the center with fVR1.
4			㉜ (fVR2)				CH1 	Adjust oscillo wave form amplitude to 3.4V with fVR2.
5			㉝ (fVR7)	Ⓕ JW49 (F-5651) Scope CH1 MONITOR OUT TV MONITOR Scope CH2	V		CH2 	Adjust rhombus vertical width to the center with fVR7.
6			㉞ (fVR8)				CH1 	Adjust oscillo wave form amplitude to 3.4V with fVR8.
7	Wipe Generator Parabola	INPUT SOURCE A NTSC: ALIGMENT PAL: CONVERGENCE MONITOR: EFFECT FADER/POSITION & WIPE ANGLE: CENTER WIPE: ON 	㉟ (fVR4)	Ⓖ JW43 (F-5651) Scope CH1	H	CH1 		Set parabola start and end to the same level with fVR4.
8			㊱ (fVR5)					Set the height to 3.0V with fVR5.
9			㊲ (fVR10)	Ⓕ JW49 (F-5651) Scope CH1	V			Set porabola V-side start and end to the same level with fVR10.
10			㊳ (fVR11)					Set the height to 3.0V with fVR11.
11		WIPE ANGLE HORIZ.	㊴ (fVR11)	MONITOR OUT TV MONITOR		TV MONITOR 		Set wipe angle to HORIZ. AC side and adjust FADER to obtain three horizontal lines with fVR11.
		WIPE ANGLE VERT.				TV MONITOR 		Set wipe angle to VERT. and adjust FADER to obtain three vertical lines with fVR11. * A small offset of circle center from input signal center may be allowed.

3-4. F-5650 Color Management Board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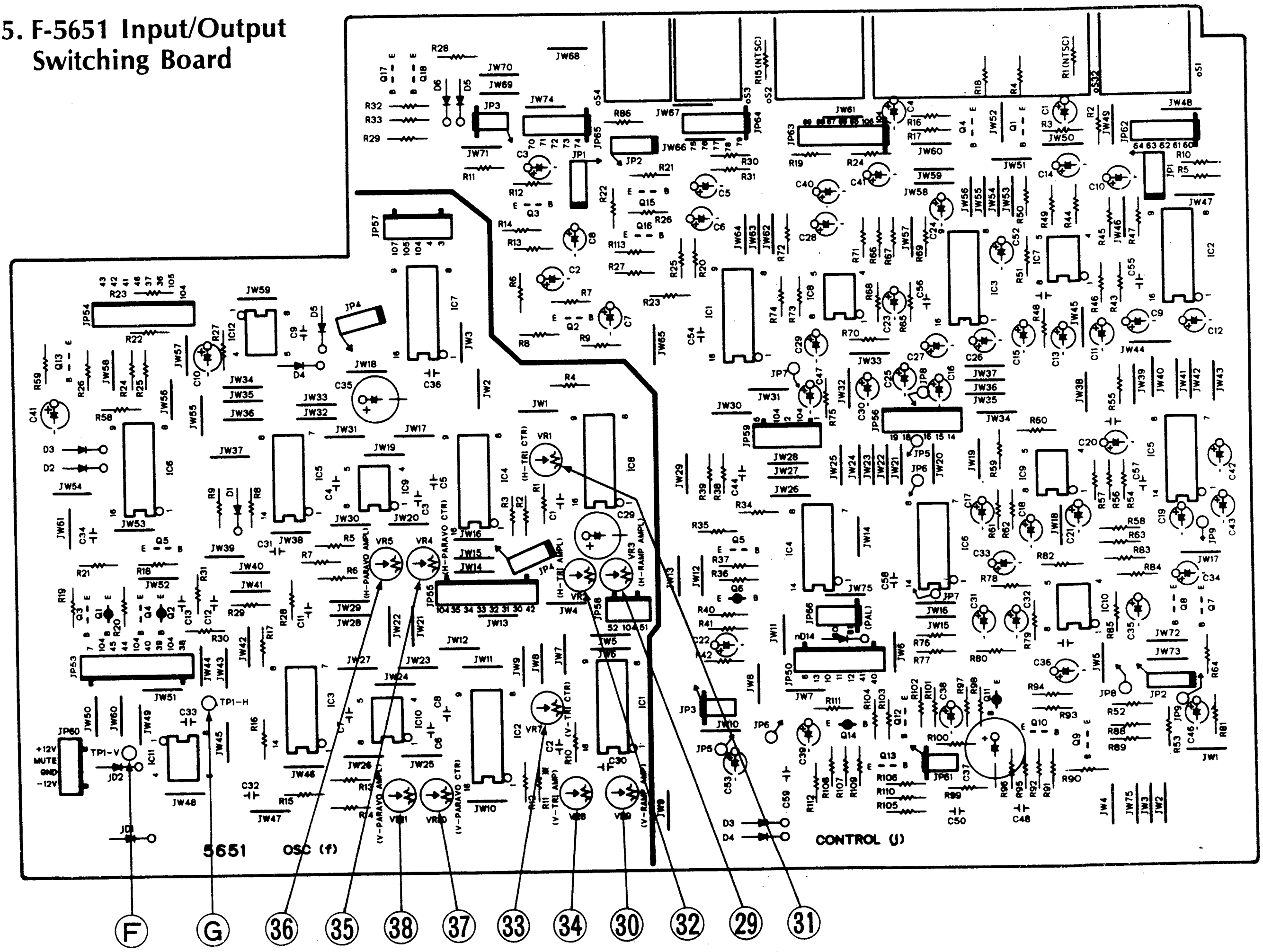
⑥
⑤
③
④
Ⓑ
Ⓐ
②
①
COLOR(r)
5650
OSC(f)
(OFFSET MACH)
(GAIN MACH)
(ART LEVEL)
(B.C.P LEVEL)
(SYNC LEVEL)
(PHASE ADJ-2)
(PD LEVEL)
(N-LEVEL)
(B.C PHASE-2)
(B.C LEVEL)
(BURST LEVEL)
(PHASE ADJ-1)
(B.C PHASE-1)
(BLACK-2)
(BLACK-1)
(CHROMA LEVEL-1)
(P-LEVEL)
(f. ADJ)
(WHITE-2)
(WHITE-1)
B-Y
R-Y
(1/2H)
(H.BL-2)
(H.BL-1)
(V.BL-1)
(V.BL-2)
(B.F-2)
(B.F-1)
4053
TA7193
JW29 (PAL)
JW30 (NT)
JW31 (PAL)
JW32 (NT)
105 (12V)
107 (-12V)
(TP1)
(TP2)
(TP3)
(TP4)
(TP5)
(ART f)
TC1

3-5. F-5651 Input/Output Switching Board


5651
OSC (f)
CONTROL (J)
+12V
MUTE
GND
-12V
TP1-V
TP1-H
F
G
㊱
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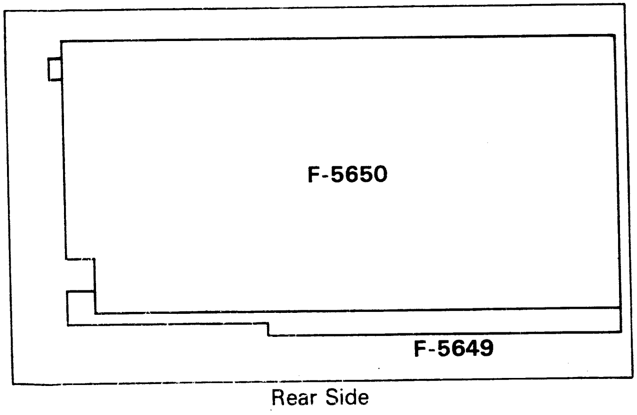
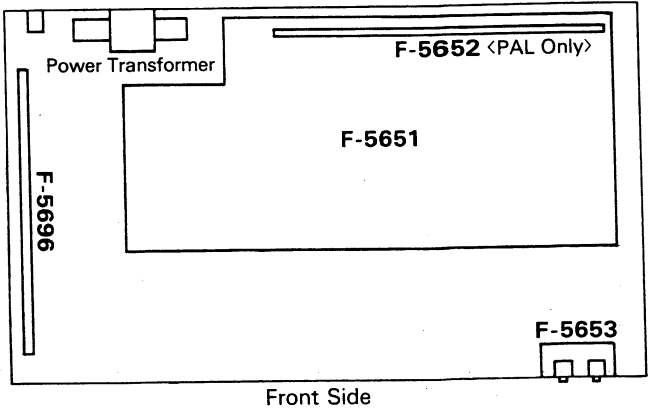
㉛

3-6. Location of Circuit Board

<Top Plate Side>

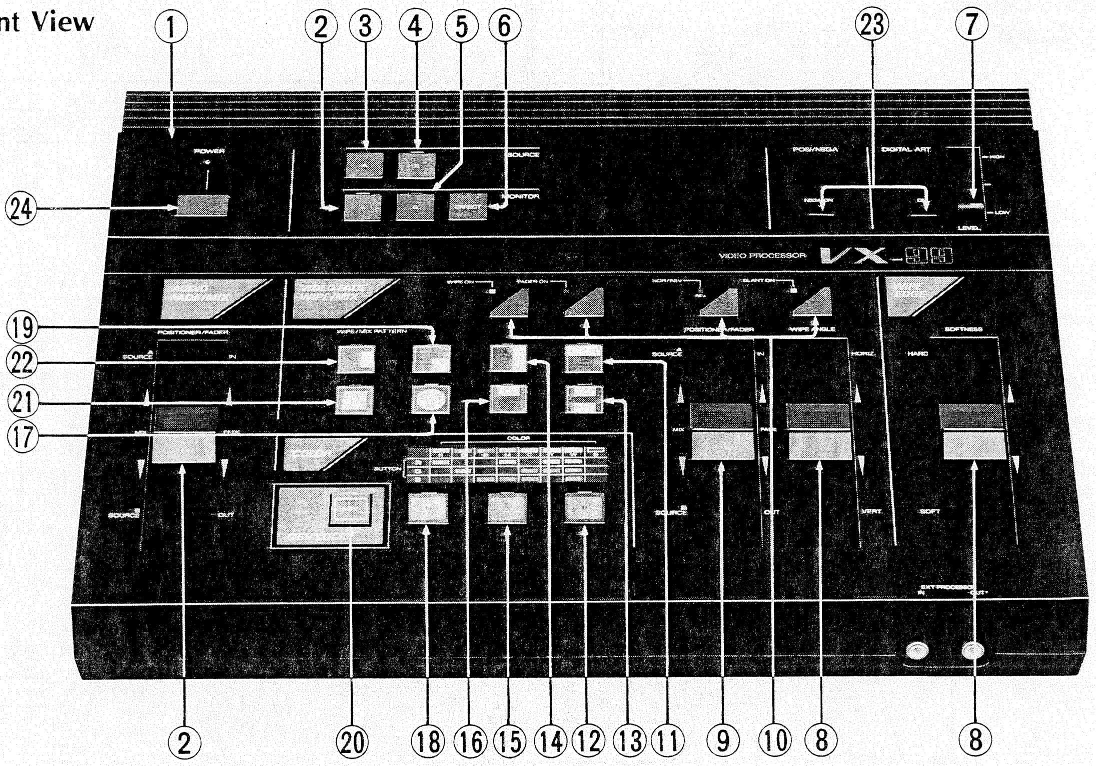

F-5650
F-5649
Rear Side

<Bottom Plate Side>


Power Transformer
F-5652 <PAL Only>
F-5651
F-5696
F-5653
Front Side

4. OTHER PARTS

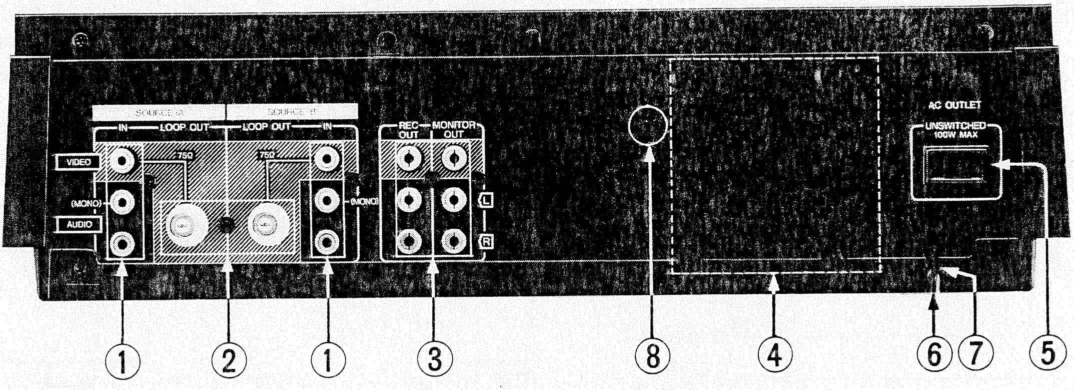
4-1. Front View



- **Parts List**

Parts No.	Stock No.	Description
1	27342700	Front Panel Ass'y (XX-V, CSA, EU, SS, UK)
	27342800	Front Panel Ass'y (UL)
2	27339200	Knob, MONITOR A
3	27339100	Knob, SOURCE A
4	27339300	Knob, SOURCE B
5	27339400	Knob, MONITOR B
6	27339500	Knob, MONITOR EFFECT
7	27097800	Knob, Ass'y DIGITAL ART LEVEL
8	27097600	Slide VR Knob Ass'y
9	27339000	Slide Ass'y, FADAR/POSITION
10	27095900	Push Swtich Knob
11	27340300	Knob, ⬒
12	27391100	Knob, Color B
13	27339700	Knob, ▨
14	27340000	Knob, ◨
15	27391000	Knob, Color G
16	27340100	Knob, ⬒
17	27099600	Knob, ◉
18	27390900	Knob, Color R
19	27339900	Knob, ◲
20	27339600	Knob, COLOR MIX
21	27340200	Knob, ▣
22	27339800	Knob, ◨
23	27095200	Knob, NEGA ON/DIGITAL ART ON
24	27039800	Knob, POWER

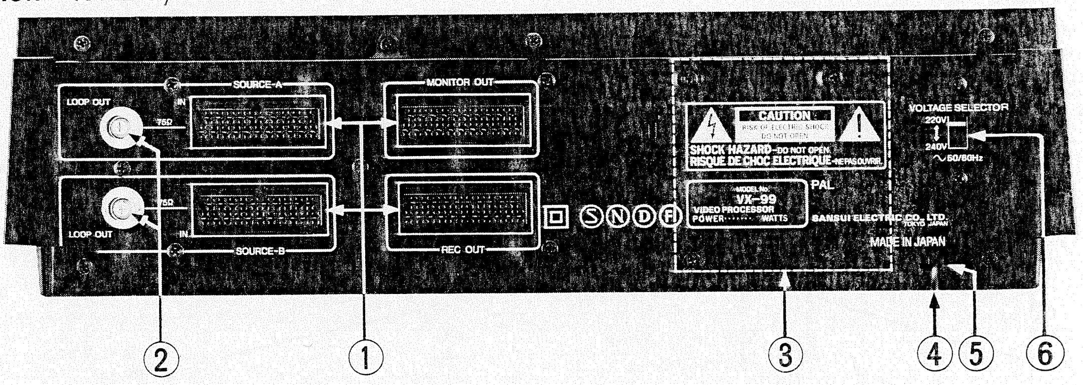
4-2. Rear View <NTSC System>


SOURCE-A
SOURCE-B
IN
LOOP OUT
LOOP OUT
IN
75Ω
75Ω
VIDEO
(MONO)
AUDIO
(MONO)
REC OUT
MONITOR OUT
L
R
AC OUTLET
UNSWITCHED 100W MAX
①
②
①
③
⑧
④
⑥
⑦
⑤

• Parts List

Parts No.	Stock No.	Description
1	48392300	3P Source A, B Terminal
2	48778700	75Ω Loop Out Terminal
3	48310000	3P REC/MONITOR Terminal
⚠4	15028709	Power Transformer (XX-V)
⚠	15028702	Power Transformer (UL, CSA)
⚠5	46364900	AC Outlet (XX-V)
⚠	48184000	AC Outlet Polarized (XX-V, UL, CSA)
⚠6	38004800	Power Supply Cord (XX-V)
⚠	48187800	Power Supply Cord (UL)
⚠	48187500	Power Supply Cord (CSA)
⚠	48585000	Power Supply Cord Polarized (XX-V)
7	47770900	AC Cord Cover
⚠8	48175200	Voltage Selector

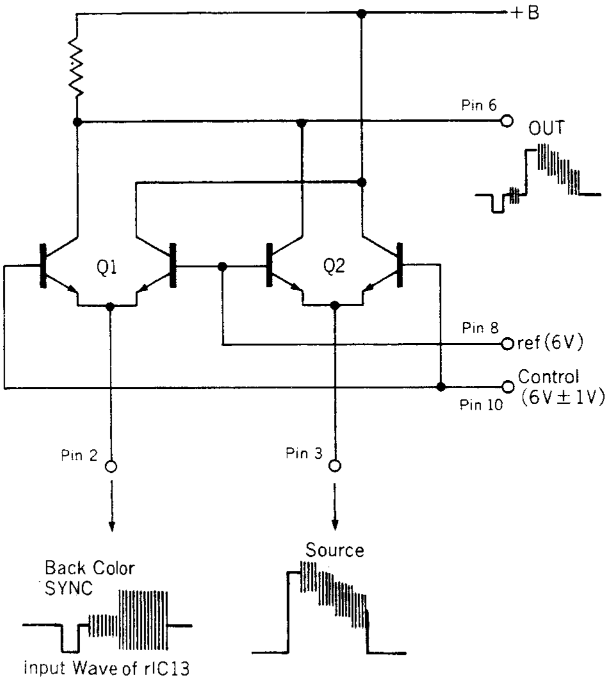
4-3. Rear View <PAL System>

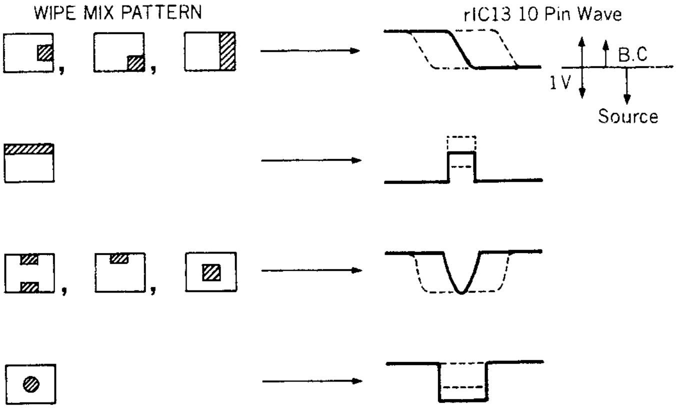

LOOP OUT
IN
75Ω
SOURCE-A
LOOP OUT
IN
75Ω
SOURCE-B
MONITOR OUT
REC OUT
CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
SHOCK HAZARD-DO NOT OPEN
RISQUE DE CHOC ELECTRIQUE-NE PAS OUVRIR
MODEL No. VX-99
VIDEO PROCESSOR
POWER WATTS
PAL
SANSUI ELECTRIC CO., LTD. TOKYO JAPAN
MADE IN JAPAN
VOLTAGE SELECTOR
220V
240V
~50/60Hz
②
①
③
④
⑤
⑥

• Parts List

Parts No.	Stock No.	Description
1	48778600	21P Connector Socket
2	48778800	75Ω Loop Out Terminal
⚠3	15029805	Power Transformer (EU, UK)
⚠	15029901	Power Transformer (SS)
⚠4	48837700	Power Supply Cord (SS)
⚠	38004500	Power Supply Cord (EU)
⚠	38004300	Power Supply Cord (UK)
5	47770900	AC Cord Cover
⚠6	07204700	Voltage Selector

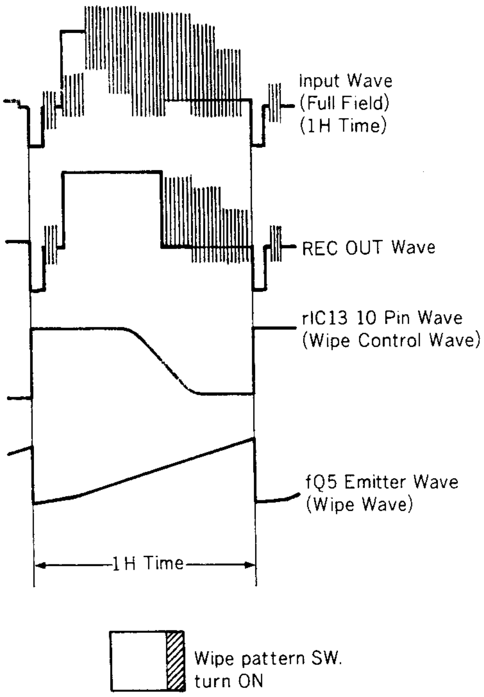
5. OPERATION OF BALANCE MIXER rIC13, NJM1496D (Refer to Schematic Diagram)

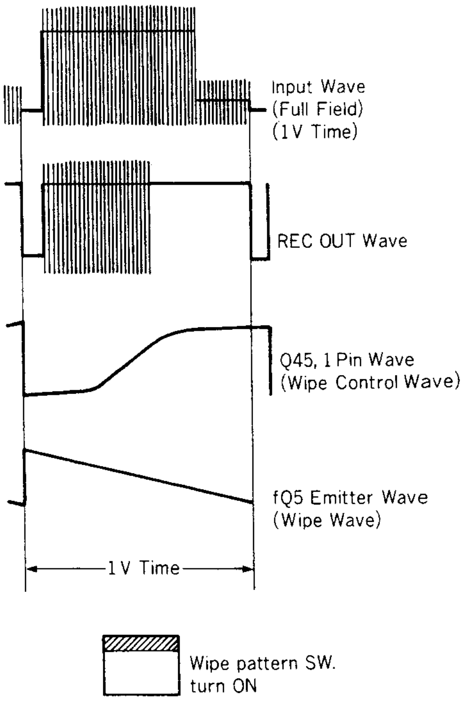

+B
Pin 6
OUT
Q1
Q2
Pin 8
ref (6V)
Control
Pin 10
(6V ± 1V)
Pin 2
Pin 3
Back Color
SYNC
Source
input Wave of rIC13


WIPE MIX PATTERN
rIC13 10 Pin Wave
B.C
1V
Source

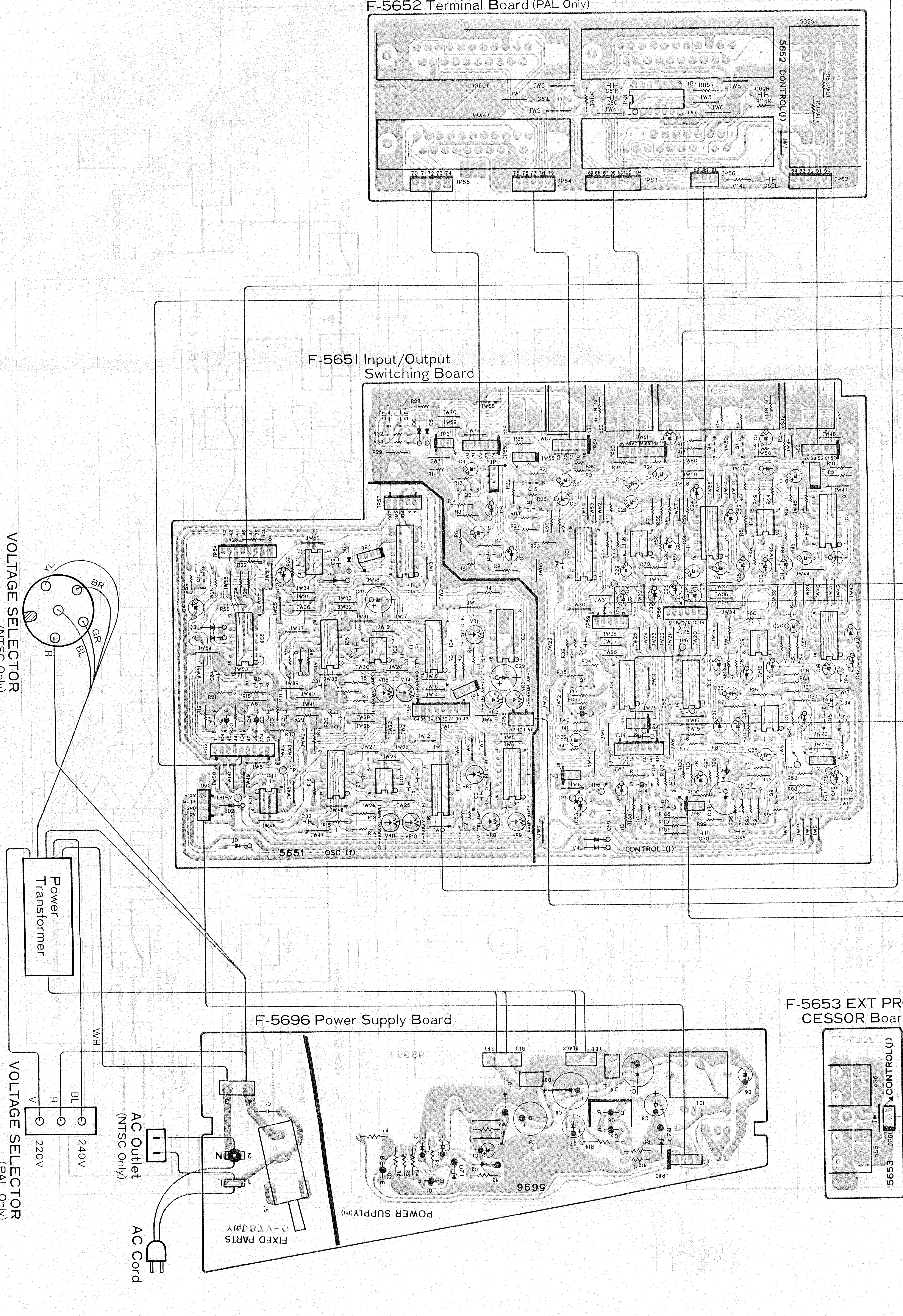
Description: SOURCE A ⟶ FULL Field
SOFTNESS ⟶ SHARP
COLOR ⟶ 6 FF
MONITOR ⟶ EFFECT
WIPE ON ⟶ ON
ROR/REV ⟶ OFF
CLANT ⟶ OFF

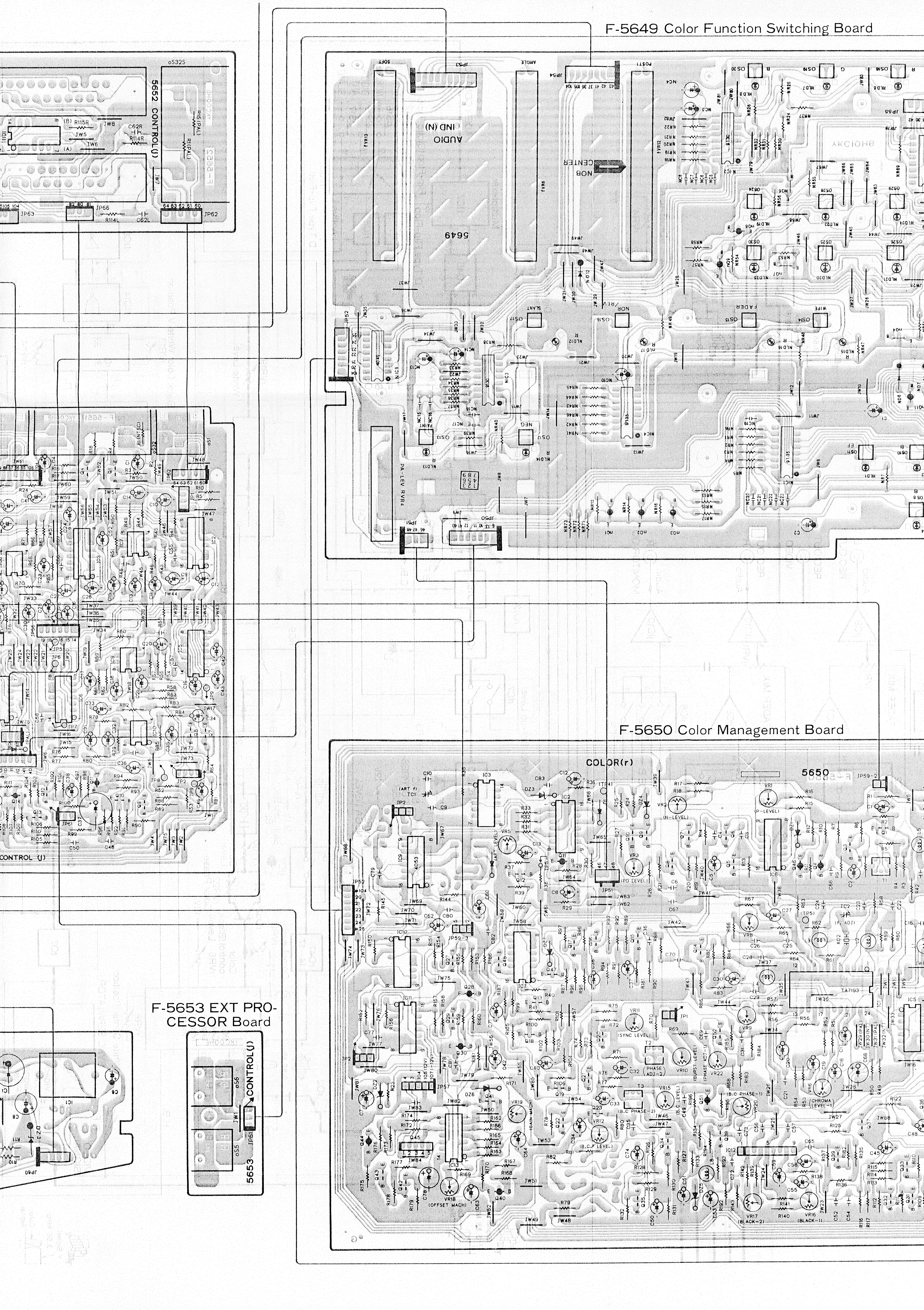
• Operation Wave of Each Point


Input Wave
(Full Field)
(1H Time)
REC OUT Wave
rIC13 10 Pin Wave
(Wipe Control Wave)
fQ5 Emitter Wave
(Wipe Wave)
1H Time
Wipe pattern SW.
turn ON

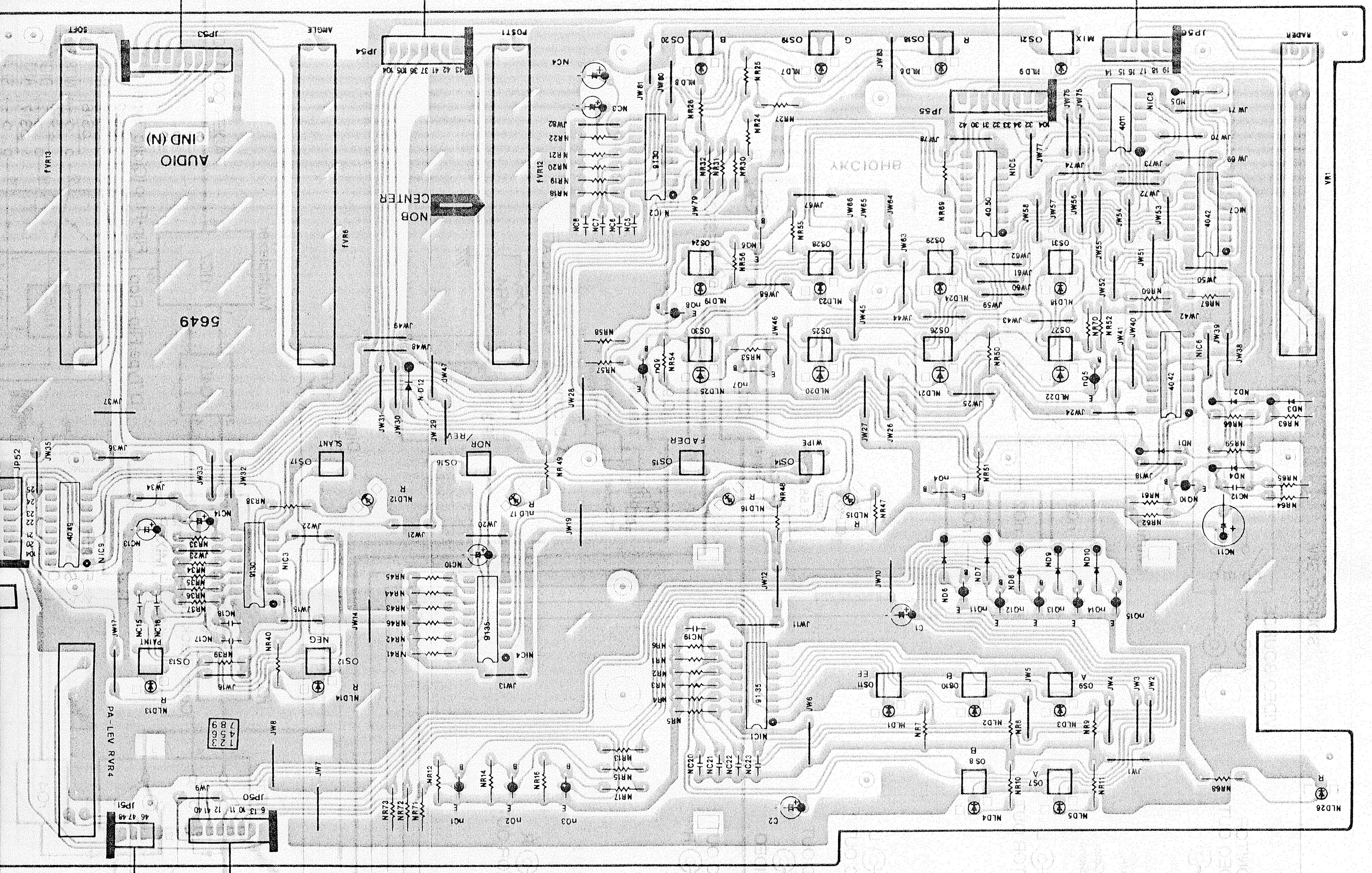

Input Wave
(Full Field)
(1V Time)
REC OUT Wave
Q45, 1 Pin Wave
(Wipe Control Wave)
fQ5 Emitter Wave
(Wipe Wave)
1V Time
Wipe pattern SW.
turn ON

6. OVERALL WIRING & PARTS LOCATION ON PRINTED CIRCUIT BOARD

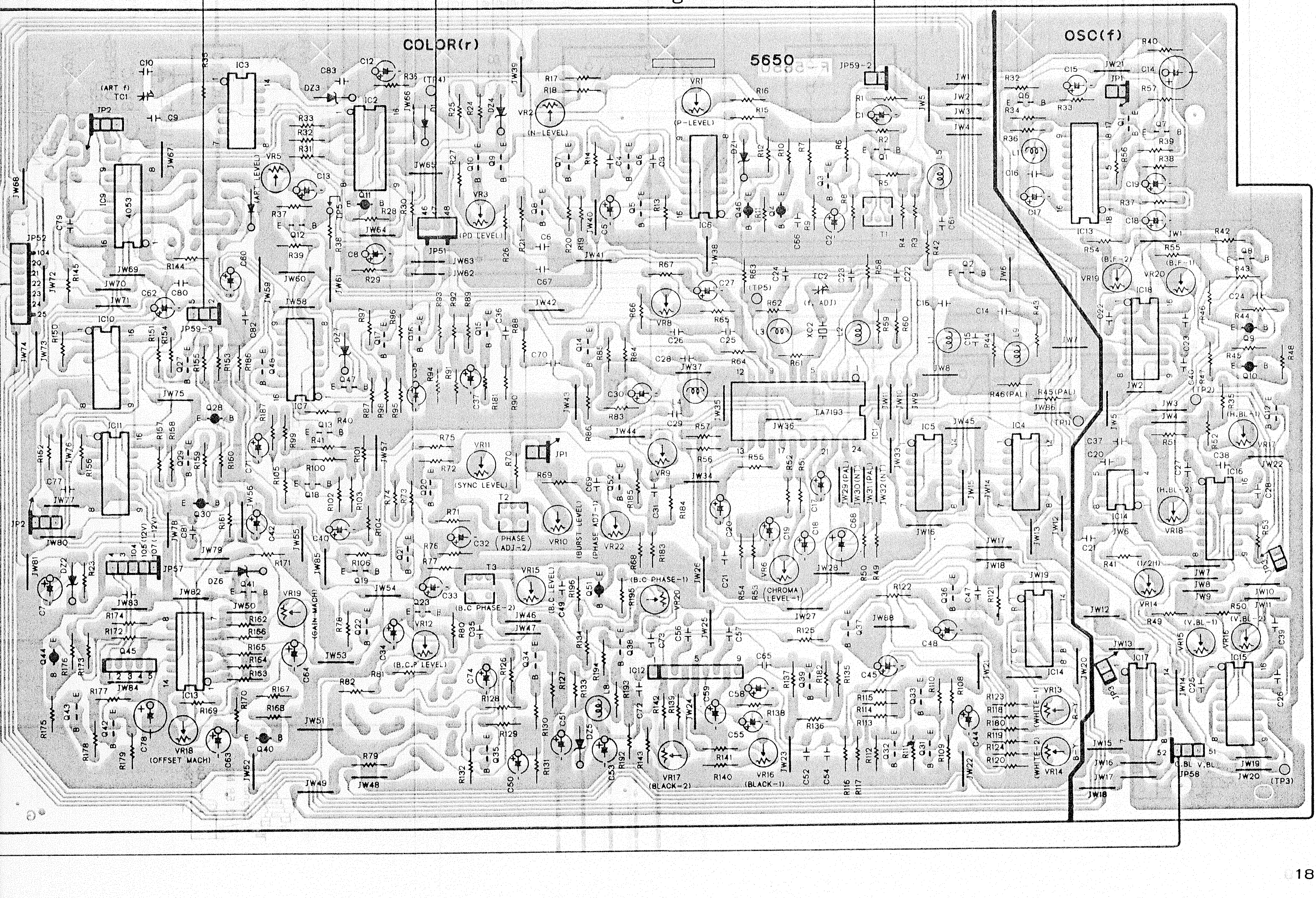

F-5652 Terminal Board (PAL Only)
5652 CONTROL(J)
(REC)
(MONI)
JP65
JP64
JP63
JP66
JP62
F-5651 Input/Output Switching Board
5651 OSC (f)
CONTROL (J)
JP54
JP53
JP57
JP55
JP58
JP56
JP59
JP60
JP61
+12V
MUTE
GND
-12V
VOLTAGE SELECTOR (NTSC Only)
Y
BR
GR
BL
R
Power Transformer
WH
VOLTAGE SELECTOR (PAL Only)
V
R
BL
220V
240V
AC Outlet (NTSC Only)
AC Cord
F-5696 Power Supply Board
GRY
BLU
BLACK
YEL
N
L
FIXED PARTS
POWER SUPPLY(m)
5696
F-5653 EXT PRO
CESSOR Boar
CONTROL(J)
5653


F-5649 Color Function Switching Board
5649
5652 CONTROL(J)
CONTROL (J)
F-5650 Color Management Board
5650
COLOR(r)
F-5653 EXT PROCESSOR Board
5653
CONTROL(J)
AUDIO
IND (N)
NOB
CENTER
NOR/REV
FADER
WIPE
SLANT
NEG
PAINT
PA-LEV RVR4
(P-LEVEL)
(N-LEVEL)
(PD LEVEL)
(SYNC LEVEL)
(PHASE ADJ-2)
(BURST LEVEL)
(PHASE ADJ-1)
(B.C PHASE-1)
(B.C PHASE-2)
(B.C.P LEVEL)
(GAIN MACH)
(OFFSET MACH)
(CHROMA LEVEL-1)
(BLACK-1)
(BLACK-2)
(ART LEVEL)
TA7193
4053

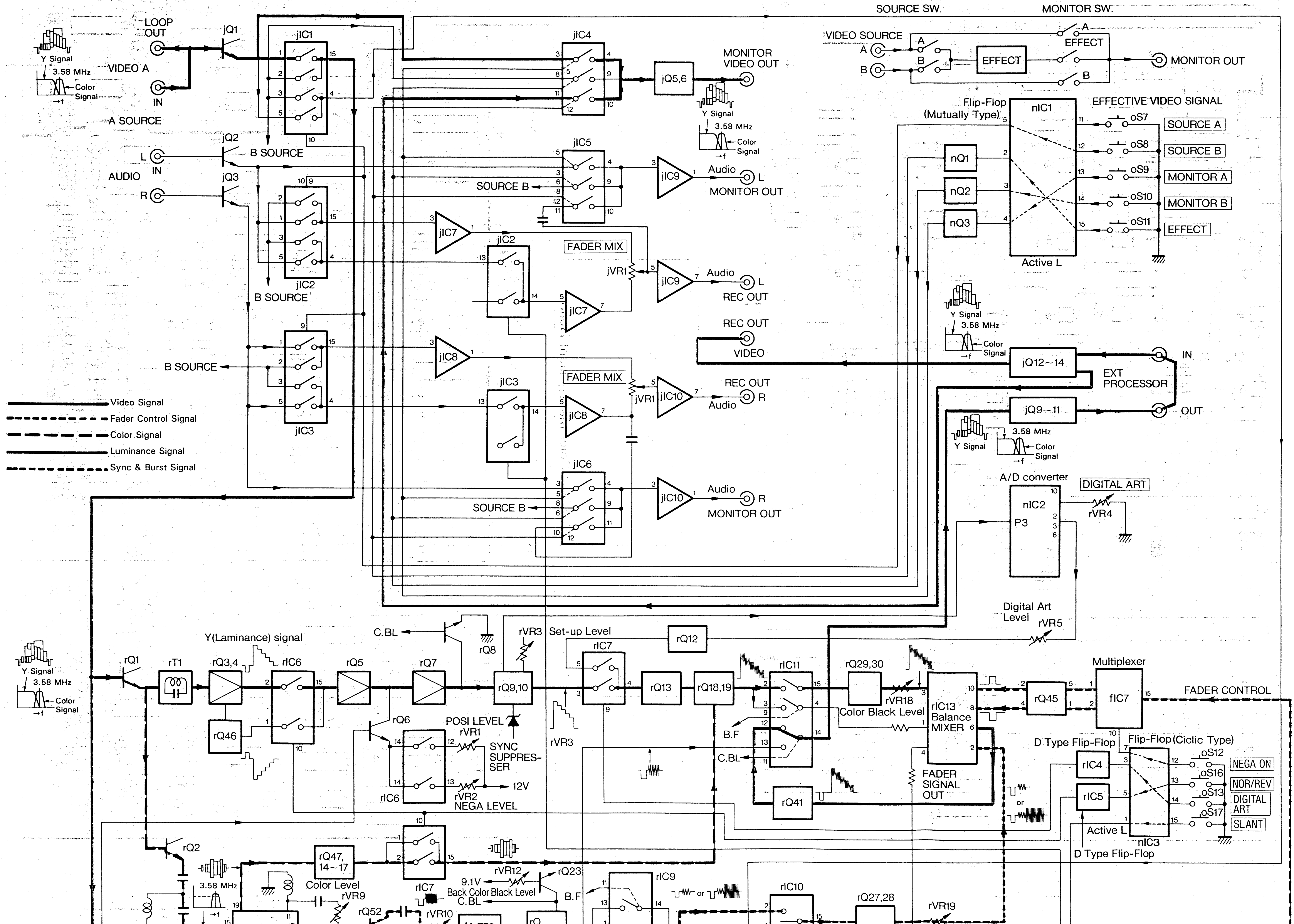
F-5649 Color Function Switching Board

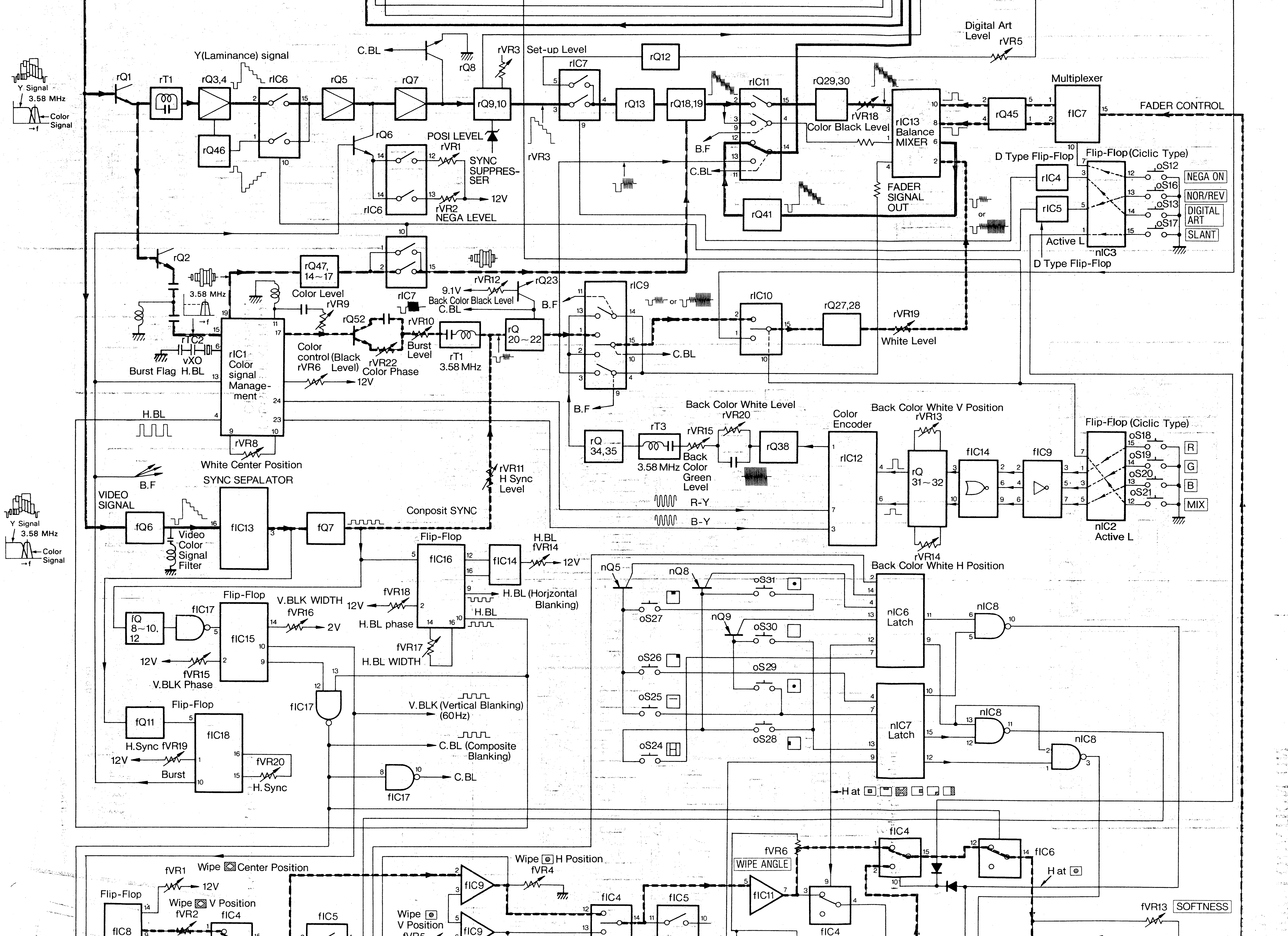

5649
AUDIO
(IND (N))
NOB CENTER
FADER
WIPE
SLANT
NOR/REV
NEG
PAINT
PA-LEV RVR4
FVR13
FVR6
JP50
JP51
JP52
JP53
JP54
JP55
JP56
9130
9135
4011
4042
4050
VR1

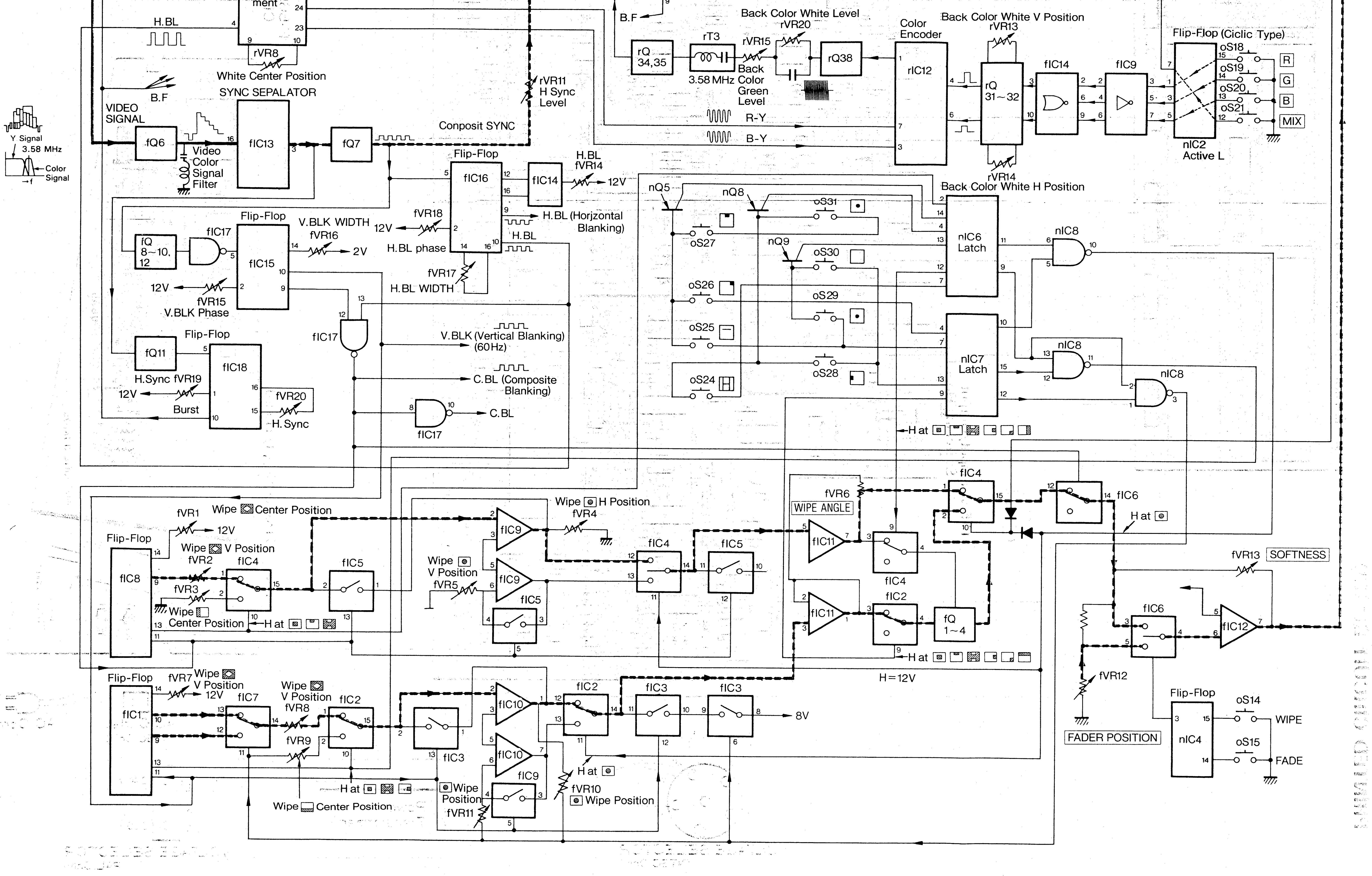
F-5650 Color Management Board


COLOR(r)
5650
OSC(f)
(ART f)
(ART LEVEL)
(P-LEVEL)
(N-LEVEL)
(PD LEVEL)
(SYNC LEVEL)
(PHASE ADJ-2)
(BURST LEVEL)
(PHASE ADJ-1)
(B.C PHASE-2)
(B.C.LEVEL)
(B.C PHASE-1)
(CHROMA LEVEL-1)
(GAIN MACH)
(B.C.P LEVEL)
(OFFSET MACH)
(BLACK-2)
(BLACK-1)
(WHITE-1)
(WHITE-2)
(f, ADJ)
TA7193
4053
(TP1)
(TP2)
(TP3)
(TP4)
(TP5)
(B.F-1)
(B.F-2)
(H.BL-1)
(H.BL-2)
(V.BL-1)
(V.BL-2)
(1/2 f)
JP51
JP52
JP56
JP57
JP58
JP59-2
JP59-3

7. BLOCK DIAGRAM


LOOP OUT
VIDEO A
IN
A SOURCE
Y Signal
3.58 MHz
Color Signal
→f
jQ1
jIC1
jQ2
B SOURCE
AUDIO
L
R
IN
jQ3
jIC2
jIC3
jIC4
jIC5
jIC6
jIC7
jIC8
jIC9
jIC10
jQ5,6
MONITOR VIDEO OUT
SOURCE B
Audio
MONITOR OUT
REC OUT
FADER MIX
jVR1
REC OUT VIDEO
SOURCE SW.
MONITOR SW.
VIDEO SOURCE
A
B
EFFECT
MONITOR OUT
Flip-Flop (Mutually Type)
nIC1
nQ1
nQ2
nQ3
Active L
EFFECTIVE VIDEO SIGNAL
oS7
oS8
oS9
oS10
oS11
SOURCE A
SOURCE B
MONITOR A
MONITOR B
EFFECT
jQ12~14
jQ9~11
EXT PROCESSOR
IN
OUT
A/D converter
nIC2
P3
DIGITAL ART
rVR4
Digital Art Level
rVR5
Video Signal
Fader Control Signal
Color Signal
Luminance Signal
Sync & Burst Signal
Y(Laminance) signal
C.BL
rQ8
rVR3 Set-up Level
rQ12
rQ1
rT1
rQ3,4
rIC6
rQ5
rQ7
rQ9,10
rIC7
rQ13
rQ18,19
rIC11
rQ29,30
rVR18
Color Black Level
rIC13 Balance MIXER
rQ45
Multiplexer
fIC7
FADER CONTROL
rQ46
rQ6
POSI LEVEL
rVR1
SYNC SUPPRESSER
rVR2 NEGA LEVEL
12V
rVR3
B.F
C.BL
rQ41
FADER SIGNAL OUT
or
D Type Flip-Flop
Flip-Flop (Ciclic Type)
rIC4
rIC5
Active L
nIC3
D Type Flip-Flop
oS12
oS16
oS13
oS17
NEGA ON
NOR/REV
DIGITAL ART
SLANT
rQ2
rQ47, 14~17
Color Level
rVR9
rIC7
9.1V
rVR12
rQ23
Back Color Black Level
C.BL
B.F
rIC9
rIC10
rQ27,28
rVR19
rQ52
rVR10

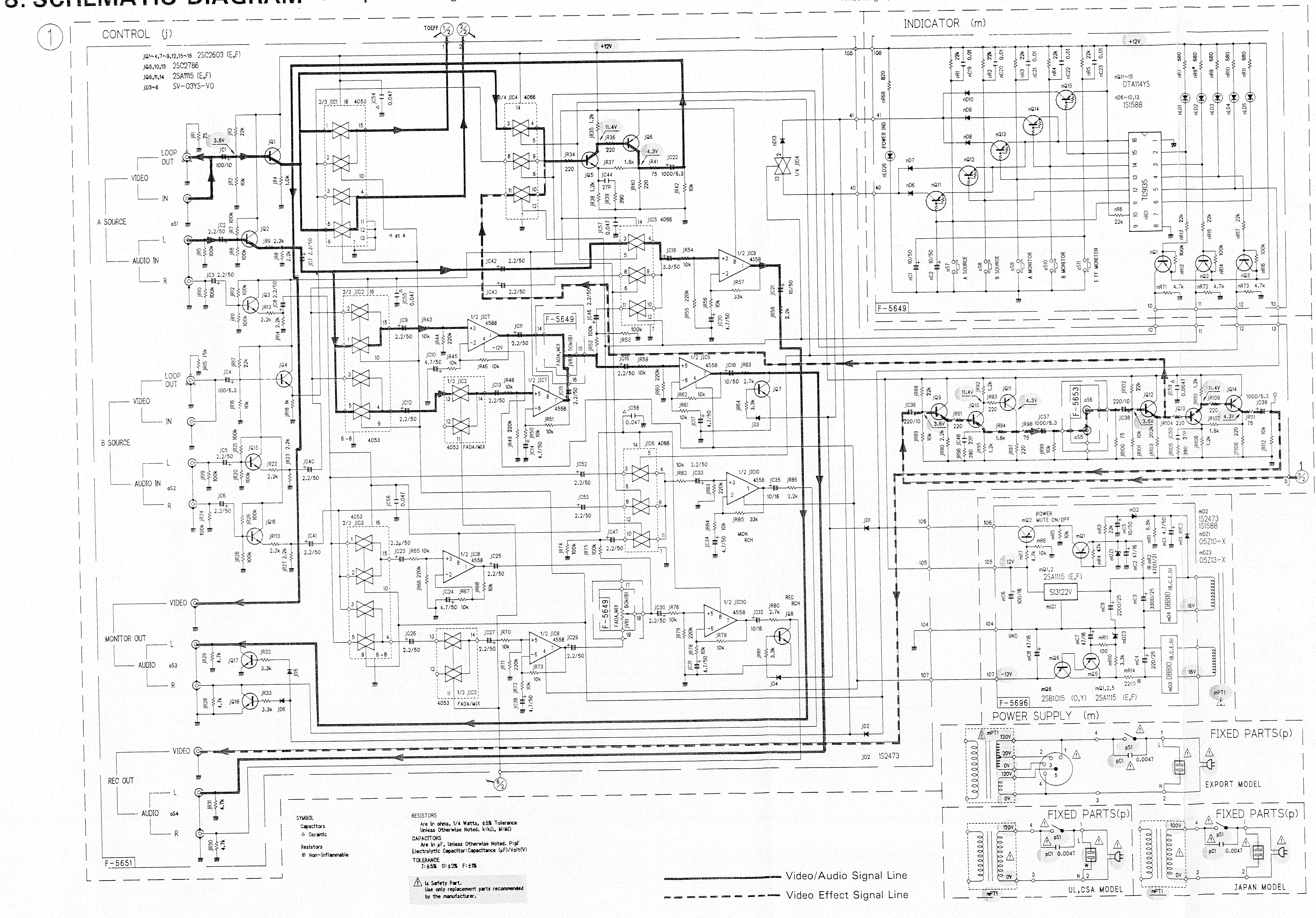

Y Signal
3.58 MHz
Color Signal
→f
Y(Laminance) signal
C.BL
rQ1
rT1
rQ3,4
rIC6
rQ5
rQ7
rQ8
rVR3 Set-up Level
rIC7
rQ12
Digital Art Level
rVR5
rQ9,10
rQ13
rQ18,19
rIC11
rQ29,30
rIC13 Balance MIXER
rVR18
Color Black Level
rQ45
Multiplexer
fIC7
FADER CONTROL
rQ46
rQ6
POSI LEVEL
rVR1
SYNC SUPPRESSER
12V
rVR2 NEGA LEVEL
rVR3
B.F
C.BL
rQ41
FADER SIGNAL OUT
or
D Type Flip-Flop
rIC4
rIC5
Flip-Flop (Ciclic Type)
oS12
oS16
oS13
oS17
NEGA ON
NOR/REV
DIGITAL ART
SLANT
Active L
nIC3
D Type Flip-Flop
rQ2
3.58 MHz
→f
rQ47, 14~17
Color Level
rVR9
rIC7
9.1V
rVR12
rQ23
Back Color Black Level
C.BL
B.F
rIC9
or
rIC10
rQ27,28
rVR19
White Level
rIC2
rQ52
rVR10
Burst Level
rT1
3.58 MHz
rQ 20~22
vXO
Burst Flag H.BL
rIC1 Color signal Management
Color control (Black Level)
rVR6
rVR22 Color Phase
12V
C.BL
B.F
Back Color White Level
rVR20
rVR15
rT3
rQ 34,35
3.58 MHz
Back Color Green Level
rQ38
Color Encoder
rIC12
Back Color White V Position
rVR13
rQ 31~32
fIC14
fIC9
Flip-Flop (Ciclic Type)
oS18
oS19
oS20
oS21
R
G
B
MIX
nIC2
Active L
R-Y
B-Y
rVR14
Back Color White H Position
H.BL
rVR8
White Center Position
B.F
SYNC SEPALATOR
rVR11 H Sync Level
VIDEO SIGNAL
fQ6
Video Color Signal Filter
fIC13
fQ7
Conposit SYNC
Y Signal
3.58 MHz
Color Signal
→f
Flip-Flop
fIC16
fIC14
H.BL
fVR14
12V
H.BL (Horjzontal Blanking)
fVR18
12V
H.BL phase
H.BL
fVR17
H.BL WIDTH
Flip-Flop
fIC17
fQ 8~10, 12
fIC15
V.BLK WIDTH
fVR16
2V
12V
fVR15
V.BLK Phase
fIC17
V.BLK (Vertical Blanking) (60Hz)
C.BL (Composite Blanking)
C.BL
fIC17
Flip-Flop
fQ11
fIC18
H.Sync fVR19
12V
Burst
fVR20
H.Sync
nQ5
nQ8
oS31
oS27
nQ9
oS30
oS26
oS29
oS25
oS24
oS28
nIC6 Latch
nIC7 Latch
nIC8
nIC8
nIC8
H at
fIC4
fIC6
H at
fVR6
WIPE ANGLE
fIC11
fIC4
fVR13 SOFTNESS
Wipe H Position
fVR4
fIC9
fIC4
fIC5
Wipe Center Position
fVR1
12V
Flip-Flop
fIC8
Wipe V Position
fVR2
fIC4
fIC5
Wipe V Position
fVR5
fIC9


ment
24
23
H.BL
4
9
10
rVR8
White Center Position
B.F
rVR11
H Sync
Level
SYNC SEPALATOR
VIDEO
SIGNAL
Y Signal
3.58 MHz
Color
Signal
→f
fQ6
Video
Color
Signal
Filter
16
fIC13
3
fQ7
Conposit SYNC
Flip-Flop
5
fIC16
12
16
9
2
14
16
10
fIC14
H.BL
fVR14
12V
H.BL (Horjzontal
Blanking)
H.BL
fVR18
12V
H.BL phase
fVR17
H.BL WIDTH
Flip-Flop
fIC17
fQ
8~10,
12
5
fIC15
14
10
9
2
V.BLK WIDTH
fVR16
2V
12V
fVR15
V.BLK Phase
13
12
fIC17
V.BLK (Vertical Blanking)
(60Hz)
C.BL (Composite
Blanking)
8
10
C.BL
fIC17
Flip-Flop
fQ11
5
fIC18
16
15
1
10
H.Sync fVR19
12V
Burst
fVR20
H. Sync
B.F
9
Back Color White Level
rVR20
rQ
34,35
rT3
3.58 MHz
rVR15
Back
Color
Green
Level
rQ38
Color
Encoder
1
rIC12
4
6
7
3
R-Y
B-Y
Back Color White V Position
rVR13
rQ
31~32
3
10
fIC14
2
6
9
fIC9
2
4
6
3
5
7
Flip-Flop (Ciclic Type)
7
1
3
5
oS18
15
oS19
14
oS20
13
oS21
12
R
G
B
MIX
nIC2
Active L
rVR14
Back Color White H Position
nQ5
nQ8
oS31
oS27
nQ9
oS30
oS26
oS29
oS25
oS28
oS24
2
14
4
13
12
7
nIC6
Latch
11
9
nIC8
6
5
10
4
7
13
9
nIC7
Latch
10
15
12
nIC8
13
12
11
nIC8
2
1
3
H at
Flip-Flop
fIC8
14
9
13
11
fVR1
12V
Wipe ▨ Center Position
Wipe ▨ V Position
fVR2
fVR3
Wipe ☐
Center Position
fIC4
1
2
10
15
H at
fIC5
2
1
13
2
3
fIC9
5
6
fIC9
Wipe ▣
V Position
fVR5
fIC5
4
3
5
Wipe ▣ H Position
fVR4
fIC4
12
13
14
11
fIC5
11
10
12
fVR6
WIPE ANGLE
5
fIC11
7
3
9
fIC4
4
2
fIC11
3
1
3
fIC2
4
9
fQ
1~4
H at
H=12V
fIC4
1
2
10
15
12
fIC6
14
H at ▣
fVR13
SOFTNESS
fIC6
3
5
4
5
6
fIC12
7
fVR12
FADER POSITION
Flip-Flop
nIC4
3
15
14
oS14
WIPE
oS15
FADE
Flip-Flop
fIC1
14
10
9
13
11
fVR7
Wipe ▨
V Position
12V
fIC7
13
12
14
11
Wipe ▨
V Position
fVR8
fIC2
2
15
10
fVR9
H at
Wipe ▭ Center Position
2
fIC3
13
1
2
3
fIC10
1
fIC10
5
6
7
▣ Wipe
Position
fVR11
fIC9
4
3
5
12
13
fIC2
14
11
H at ▣
fVR10
▣ Wipe Position
fIC3
11
10
12
fIC3
9
8
6
8V

8. SCHEMATIC DIAGRAM

8-1. Input Switching & Audio Section <NTSC System>

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.


A
B
C
D
E
F
G
H
1
2
3
4
5
①
CONTROL (j)
jQ1~4,7~9,12,15~18 2SC2603 (E,F)
jQ5,10,13 2SC2786
jQ6,11,14 2SA1115 (E,F)
jD3~6 SV-03YS-V0
TOEFF
+12V
LOOP OUT
VIDEO
IN
A SOURCE
AUDIO IN
L
R
B SOURCE
MONITOR OUT
AUDIO
REC OUT
F-5651
F-5649
FADA/MIX
4053
4066
4558
H at A
INDICATOR (m)
nQ11~15 DTA114YS
nD6~10,13 1S1588
TC9135
POWER IND
A SOURCE
B SOURCE
A MONITOR
B MONITOR
E FF MONITOR
F-5649
F-5653
POWER MUTE ON/OFF
S13122V
2SA1115 (E,F)
2SB1015 (O,Y)
mD2 1S2473 1S1588
mD21 05Z10-X
mD23 05Z13-X
F-5696
POWER SUPPLY (m)
FIXED PARTS(p)
EXPORT MODEL
UL,CSA MODEL
JAPAN MODEL
120V
100V
0V
1S2473
REC RCH

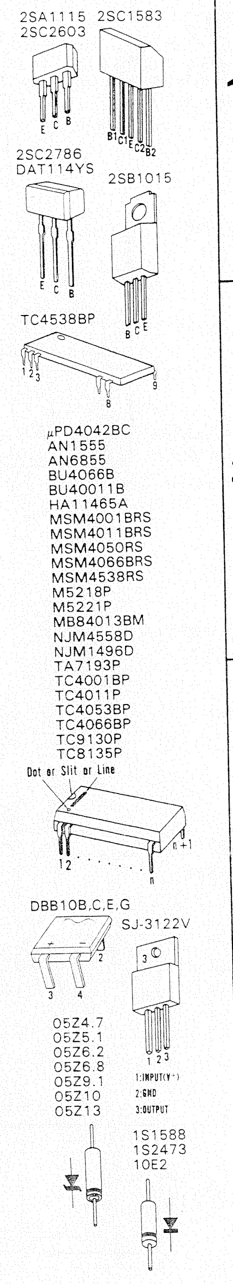
SYMBOL
Capacitors
△ Ceramic
Resistors
▣ Non-Inflammable

RESISTORS
Are in ohms, 1/4 Watts, ±5% Tolerance
Unless Otherwise Noted. k:kΩ, M:MΩ
CAPACITORS
Are in μF, Unless Otherwise Noted. P:pF
Electrolytic Capacitor:Capacitance (μF)/Volt(V)
TOLERANCE
J:±5% G:±2% F:±1%

⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.

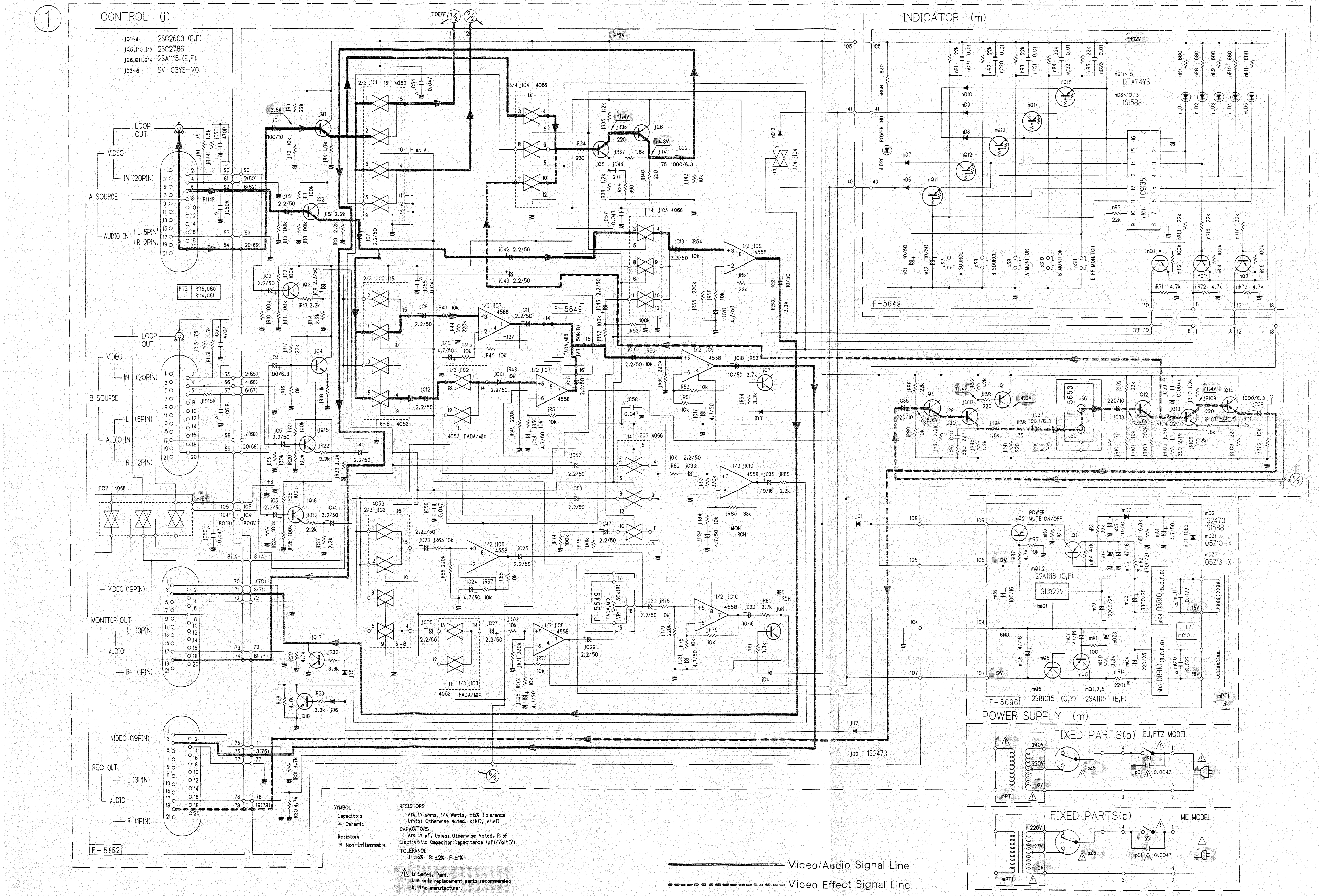
Video/Audio Signal Line

Video Effect Signal Line


2SA1115 2SC1583
2SC2603
E C B
B1 C1 E C2 B2
2SC2786
DAT114YS
2SB1015
B C E
TC4538BP
1 2 3
8
9
μPD4042BC
AN1555
AN6855
BU4066B
BU40011B
HA11465A
MSM4001BRS
MSM4011BRS
MSM4050RS
MSM4066BRS
MSM4538RS
M5218P
M5221P
MB84013BM
NJM4558D
NJM1496D
TA7193P
TC4001BP
TC4011P
TC4053BP
TC4066BP
TC9130P
TC8135P
Dot or Slit or Line
1 2
n
n+1
DBB10B,C,E,G
SJ-3122V
1 2 3
1:INPUT(V+)
2:GND
3:OUTPUT
05Z4.7
05Z5.1
05Z6.2
05Z6.8
05Z9.1
05Z10
05Z13
1S1588
1S2473
10E2

8-2. Input Switching & Audio Section <PAL System>

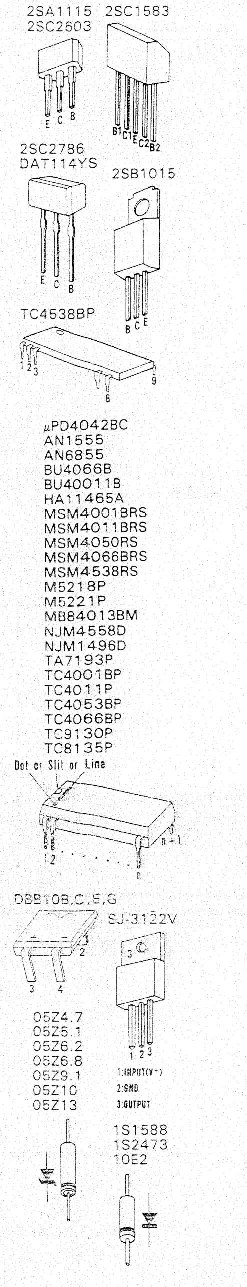
* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.


①
CONTROL (j)
JQ1~4 2SC2603 (E,F)
JQ5,J10,J13 2SC2786
JQ6,Q11,Q14 2SA1115 (E,F)
JD3~6 SV-03YS-V0
LOOP OUT
VIDEO
IN (20PIN)
A SOURCE
AUDIO IN
L 6PIN
R 2PIN
LOOP OUT
VIDEO
IN (20PIN)
B SOURCE
L (6PIN)
AUDIO IN
R (2PIN)
JIC11 4066
VIDEO (19PIN)
MONITOR OUT
L (3PIN)
AUDIO
R (1PIN)
VIDEO (19PIN)
REC OUT
L (3PIN)
AUDIO
R (1PIN)
F-5652
+12V
2/3 JIC1 4053
3/4 JIC4 4066
14 JIC5 4066
2/3 JIC2 4053
1/2 JIC7 4588
1/2 JIC9 4558
F-5649
FADA/MIX
4053 FADA/MIX
14 JIC6 4066
1/2 JIC10 4558
4053 2/3 JIC3
1/2 JIC8 4558
4053 FADA/MIX
MON RCH
REC RCH
INDICATOR (m)
nQ11~15 DTA114YS
nD6~10,13 1S1588
TC9135
POWER IND
A SOURCE
B SOURCE
A MONITOR
B MONITOR
E FF MONITOR
F-5649
EFF
F-5653
POWER MUTE ON/OFF
mQ1,2 2SA1115 (E,F)
SI3122V
mD2 1S2473 1S1588
mD21 05Z10-X
mD23 05Z13-X
mQ6 2SB1015 (O,Y)
mQ1,2,5 2SA1115 (E,F)
F-5696
mPT1
POWER SUPPLY (m)
FIXED PARTS(p) EU,FTZ MODEL
240V
220V
0V
pS1
pC1 0.0047
pZ5
FIXED PARTS(p) ME MODEL
220V
127V
0V
Video/Audio Signal Line
Video Effect Signal Line

SYMBOL
Capacitors
△ Ceramic
Resistors
⊡ Non-Inflammable

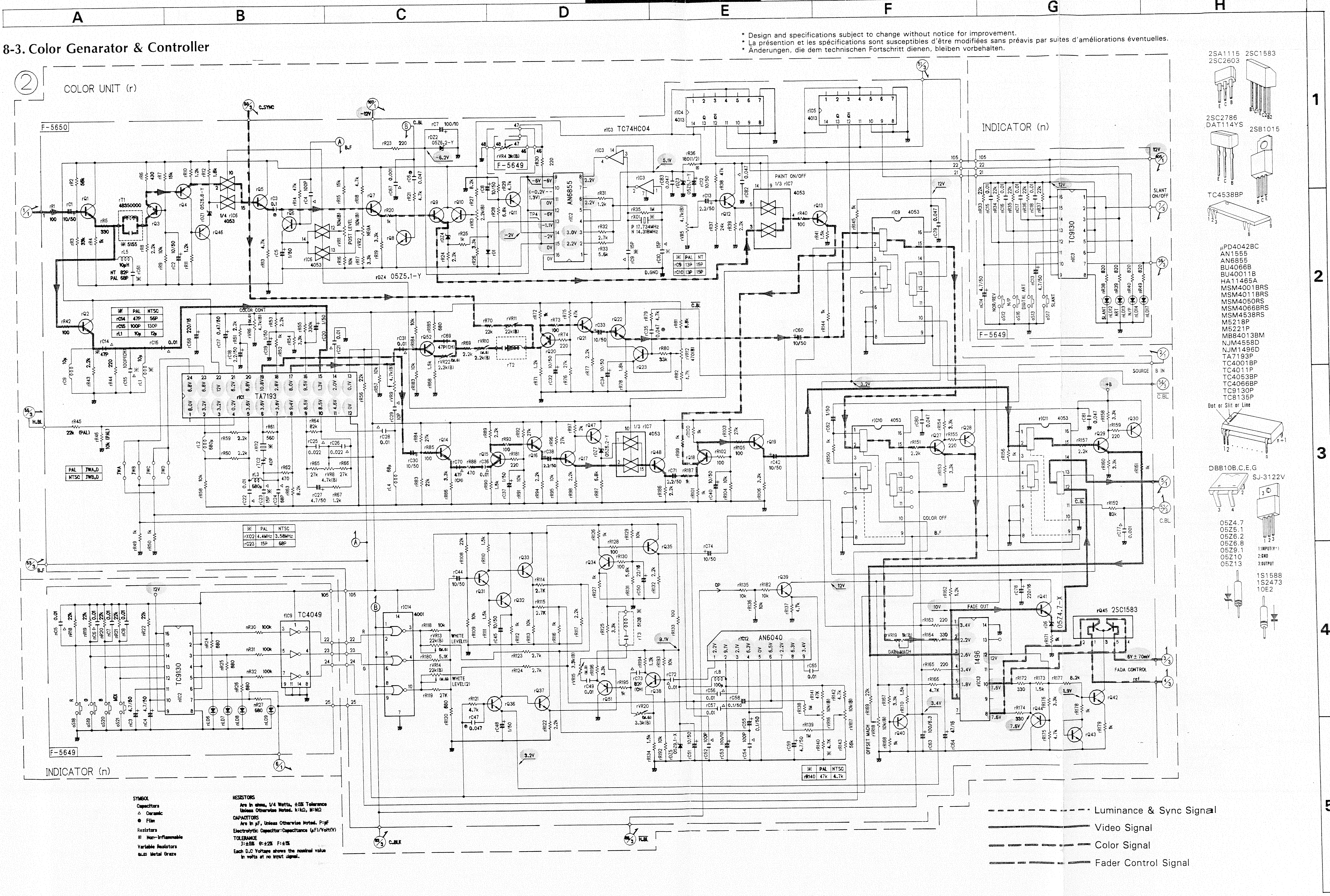
RESISTORS
Are in ohms, 1/4 Watts, ±5% Tolerance
Unless Otherwise Noted. k:kΩ, M:MΩ
CAPACITORS
Are in μF, Unless Otherwise Noted. P:pF
Electrolytic Capacitor:Capacitance (μF)/Volt(V)
TOLERANCE
J:±5% G:±2% F:±1%

⚠ is Safety Part.
Use only replacement parts recommended by the manufacturer.


2SA1115 2SC1583
2SC2603
E C B
B1 C1 E C2 B2
2SC2786
DAT114YS
2SB1015
E C B
B C E
TC4538BP
1 2 3
8
9
μPD4042BC
AN1555
AN6855
BU4066B
BU40011B
HA11465A
MSM4001BRS
MSM4011BRS
MSM4050RS
MSM4066BRS
MSM4538RS
M5218P
M5221P
MB84013BM
NJM4558D
NJM1496D
TA7193P
TC4001BP
TC4011P
TC4053BP
TC4066BP
TC9130P
TC8135P
Dot or Slit or Line
1 2
n
n+1
DBB10B,C,E,G
SJ-3122V
2
3 4
3
1 2 3
1:INPUT(V+)
2:GND
3:OUTPUT
05Z4.7
05Z5.1
05Z6.2
05Z6.8
05Z9.1
05Z10
05Z13
1S1588
1S2473
10E2

8-3. Color Genarator & Controller

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

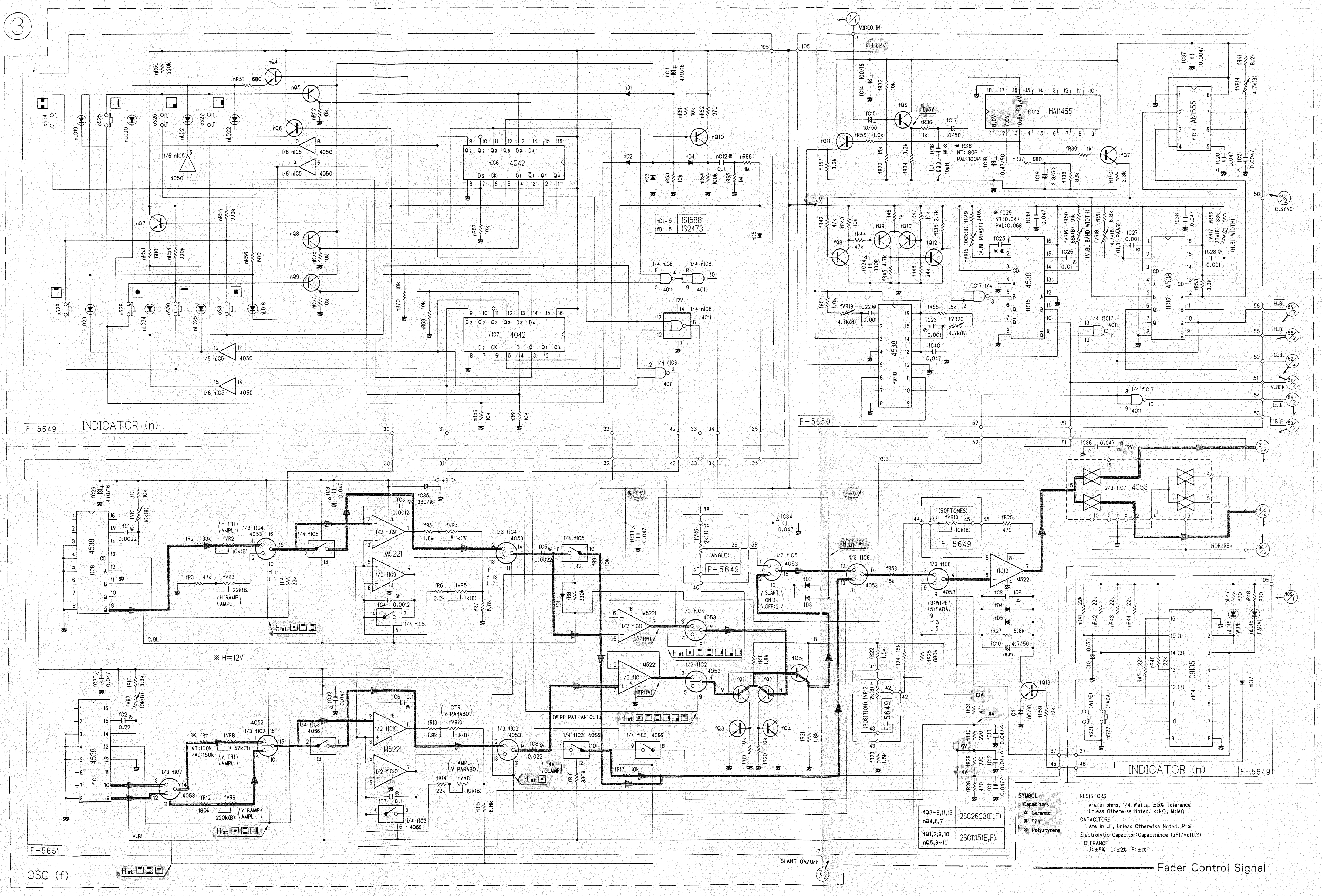

A
B
C
D
E
F
G
H
1
2
3
4
5
②
COLOR UNIT (r)
F-5650
F-5649
INDICATOR (n)
rIC1 TA7193
rIC2 AN6855
rIC3 TC74HC04
rIC4 4013
rIC5 4013
rIC6 4053
rIC7 4053
rIC9 4053
rIC10 4053
rIC11 4053
rIC12 AN6040
rIC13 1496
rIC14 4001
nIC1 TC9130
nIC2 TC9130
nIC9 TC4049
rQ45 2SC1583
COLOR CONT
POST LEVEL
NEGA
PAINT ON/OFF
SLANT ON/OFF
SOURCE B IN
COLOR OFF
FADE OUT
FADA CONTROL
GAIN MACH
OFFSET MACH
WHITE LEVEL(1)
WHITE LEVEL(2)
C.SYNC
C.BL
C.BLK
H.BL
B.F
D.GND
P 17.734MHz
N 14.318MHz
NOR/REV
N/P
DIGITAL ART
SLANT
2SA1115 2SC1583
2SC2603
2SC2786
DAT114YS
2SB1015
TC4538BP
µPD4042BC
AN1555
AN6855
BU4066B
BU4001B
HA11465A
MSM4001BRS
MSM4011BRS
MSM4050RS
MSM4066BRS
MSM4538RS
M5218P
M5221P
MB84013BM
NJM4558D
NJM1496D
TA7193P
TC4001BP
TC4011P
TC4053BP
TC4066BP
TC9130P
TC8135P
Dot or Slit or Line
DBB10B,C,E,G
SJ-3122V
05Z4.7
05Z5.1
05Z6.2
05Z6.8
05Z9.1
05Z10
05Z13
1:INPUT(Y-)
2:GND
3:OUTPUT
1S1588
1S2473
10E2
Luminance & Sync Signal
Video Signal
Color Signal
Fader Control Signal

SYMBOL
Capacitors
△ Ceramic
● Film
Resistors
⊞ Non-Inflammable
Variable Resistors
(M.G) Metal Graze

RESISTORS
Are in ohms, 1/4 Watts, ±5% Tolerance
Unless Otherwise Noted. k:kΩ, M:MΩ
CAPACITORS
Are in µF, Unless Otherwise Noted. P:pF
Electrolytic Capacitor:Capacitance (µF)/Volt(V)
TOLERANCE
J:±5% G:±2% F:±1%
Each D.C Voltage shows the nominal value
in volts at no input signal.

8-4. Wipe pattern & SYNC Generator

* Design and specifications subject to change without notice for improvement.
* La présention et les spécifications sont susceptibles d'être modifiées sans préavis par suites d'améliorations éventuelles.
* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.

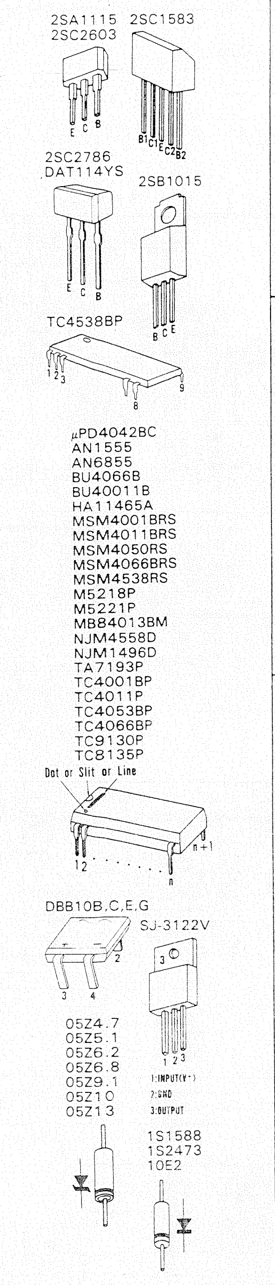

③
INDICATOR (n)
F-5649
F-5650
F-5651
OSC (f)
VIDEO IN
C.SYNC
H.BL
C.BL
V.BLK
B.F
NOR/REV
SLANT ON/OFF
M5221
4538
4042
4053
4066
4050
4011
HA11465
AN1555
TC9135
TP1(H)
TP1(V)
(WIPE PATTAN CUT)
※ H=12V
1
2
3
4
5

fQ3~8,11,13 nQ4,6,7	2SC2603(E,F)
fQ1,2,9,10 nQ5,8~10	2SC1115(E,F)

SYMBOL
Capacitors
△ Ceramic
⊛ Film
⊗ Polystyrene

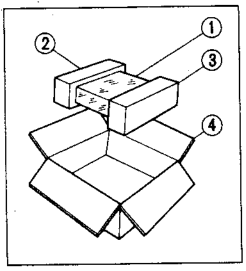
RESISTORS
Are in ohms, 1/4 Watts, ±5% Tolerance
Unless Otherwise Noted. k:kΩ, M:MΩ
CAPACITORS
Are in µF, Unless Otherwise Noted. P:pF
Electrolytic Capacitor:Capacitance (µF)/Volt(V)
TOLERANCE
J:±5% G:±2% F:±1%

Fader Control Signal


2SA1115 2SC1583
2SC2603
E C B
B1 C1 E C2 B2
2SC2786
DAT114YS
2SB1015
B C E
TC4538BP
1 2 3
8 9
µPD4042BC
AN1555
AN6855
BU4066B
BU40011B
HA11465A
MSM4001BRS
MSM4011BRS
MSM4050RS
MSM4066BRS
MSM4538RS
M5218P
M5221P
MB84013BM
NJM4558D
NJM1496D
TA7193P
TC4001BP
TC4011P
TC4053BP
TC4066BP
TC9130P
TC8135P
Dot or Slit or Line
1 2 n n+1
DBB10B,C,E,G
SJ-3122V
05Z4.7
05Z5.1
05Z6.2
05Z6.8
05Z9.1
05Z10
05Z13
1:INPUT(V+)
2:GND
3:OUTPUT
1S1588
1S2473
10E2

9. PACKING LIST

Parts No.	Stock No.	Description
1	47858600	Viniyl Bag
2	27096200	Styrofoam Packing (Left)
3	27096300	Styrofoam Packing (Right)
4	27338700	Carton Case NTSC System
	27396300	Carton Case PAL System



10. ACCESSORY LIST

Stock No.	Description
49022300	Operating Instruction NTSC System
49022400	Operating Instruction PAL System